



# Mid-Pacific ICT Center Quarterly Newsletter

This work is supported, in part, by the National Science Foundation under grant DUE 0802284. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect those of the National Science Foundation. MPICT is hosted by the CNIT Department at City College of San Francisco.



**2011**

**Newsletter**

**Quarter 2**

## Summer 2011 Faculty Development Week

June 13-17, 2011, MPICT held its 3rd annual Summer Faculty Development Week at the City College of San Francisco Ocean Campus. A total of 81 people attended, including faculty representatives of ICT related programs at 34 community colleges in four states (California, Oregon, Nevada and Hawaii).



Faculty Development Week Attendees Networking at Lunch

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## Building ICT Pathways Symposium

May 6, 2011, MPICT led a successful ICT Pathways Symposium at Ohlone College in Fremont, CA with over 50 attendees. MPICT co-sponsored the event with the [California Department of Education](#), [Cisco Networking Academies](#), [WhyITNow.org](#), and [Ohlone College](#).



Dr. James Wright, VP Instruction, Ohlone College and Charles Brown, Superintendent of Mission Valley ROP at Symposium

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## International ICT Capstone Pilot with Paris, France

This spring, MPICT conducted an exciting pilot project, funded by the National Science Foundation, which created an international ICT capstone course for students from four community colleges in the MPICT region and the Centre des Formations Industrielles (CFI) in Paris, France, which has a "Digital Sister City" relationship with San Francisco, CA, where MPICT's office is located.

International collaboration is increasingly common in ICT workforce roles. This experience explored how we might better integrate international experiences into community college ICT education.

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Faculty Development Week is an intensive, 4.5 day event designed to help ICT faculty stay current on emerging technologies, learn to teach new material that is current and relevant, and learn to use new teaching practices and tools.

### **WORLD ORGANIZATION OF WEBMASTERS: ALIGNING AND IMPROVING WEB CURRICULUM:**

The [World Organization of Webmasters \(WOW\)](#) is a 12-year-old, non-profit professional association dedicated to the support of individuals and organizations that create, manage or market web sites. WOW provides education as well as certification, technical, employment and member advantage services to thousands of aspiring and practicing web professionals worldwide.

Most community colleges are teaching web curriculum, but curriculum varies widely across colleges. Many do not teach current best practices for optimization for mobile device viewing, for web crawler results, or for ADA compliance, for example.

This track provided common structure, best practices, curriculum, standards, teaching tools, labor market information, standard DOL job descriptions, and certification preparation for faculty who want to create or modify web programs to align with industry best practices. Faculty received a free web certification test and learned how about emerging web technologies, like HTML5 and CSS3.

It was taught by Mark DuBois, who serves as Director of Education for WOW and has been teaching at Illinois Central College for over a decade.



Mark DuBois Sharing Web Knowledge, Skills & Tools

### **CERTIFIED INFORMATION SYSTEMS SECURITY PROFESSIONAL (CISSP):**

The [International Information Systems Security Certification Consortium, Inc., \(ISC\)<sup>2</sup>](#) is the global, not-for-profit leader in educating and certifying information security professionals throughout their careers. Recognized for Gold Standard certifications and world class education programs, (ISC)<sup>2</sup> provides vendor-neutral education products, career services, and Gold Standard credentials to professionals in more than 135 countries. Its membership includes nearly 75,000 certified industry professionals worldwide.

This class covered information security in depth, including access control, application security, business continuity, cryptography, risk management, legal issues, physical security, and telecommunications and network security. The class helps prepare students for the Certified Information Systems Security Professional (CISSP) credential, which is very valuable for high-level information security professionals.

CISSP certification adds to faculty value and credibility as an industry professional and professor, and it provides global credibility to students as security professionals. Students and career changers considering moving into the field of information security, or just starting out in the Information Security workforce, are eligible to become an [Associate of \(ISC\)<sup>2</sup>](#), something that helps them stand out, even without a lot of work experience as a security professional.

This track was taught by Sam Bowne, a City College of San Francisco faculty superstar. He taught Ethical Hacking and Network Defense at MPICT's 2009 Faculty Development Week.



Sam Bowne (Right Front) Keeping It Secure Over Lunch

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## INTRODUCTION TO JUNIPER OPERATING SYSTEM (IJOS) and JUNIPER ROUTING ESSENTIALS (JRE):

[Juniper Networks, Inc.](#) is a leader in high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network.

The [Juniper Networks Academic Alliance](#) is designed for colleges and universities to offer Juniper Networks Enterprise Networking courses to their students.

This track prepared faculty to deliver an introductory course that provides students with the foundational knowledge required to work with the Junos operating system and to configure Junos devices.

This track also provided faculty exposure to the cutting edge “Junosphere Classroom” virtual Junos environment, a first in the industry, which was announced at MPICT’s 2011 Winter Conference.

Junosphere is a cloud-based environment that enables the creation and modeling of virtual networks using actual routing, switching, and security platform code (not a simulator).

The track was taught by Brandon Wilson, a Juniper trainer, and Nic Xenos, Senior Manager of the Juniper Academic Alliance Program, was at the event to share information and enthusiasm with all.



Bill Saichek (Left) Will Be Teaching Juniper This Fall

## VMWARE VSPHERE: INSTALL, CONFIGURE, MANAGE:

Virtualization is ICT technology to replace many computer resources dedicated to specific functions with fewer computer resources shared by many different functions. Virtualization is at the strategic intersection of 3 major ICT trends: ICT cost management, cloud computing and Green IT.

In these tough economic times, all kinds of organizations are under pressure to reduce ICT capital and operating costs. Virtualization is a ripe method to do that, and it is being implemented rapidly by many organizations for that purpose.

Cloud computing moves away from many high-powered computing resources at the edge of a client-server architecture to thin clients at the edge of the network and consolidated and centrally managed computing resources hosted in data centers or outsourced. Virtualization is a key strategy for cost-effectively implementing data center cloud based services.

Globally, 2-3% of greenhouse gas emissions are attributed to ICT. A key way to reduce those emissions is to reduce the number of computing resources in use, the space required for them and their cooling and electricity requirements. Virtualization is a key method for addressing reduction of greenhouse gas emissions attributed to ICT.

VMware is a market leader in the virtualization space. Faculty in the VMware vSphere track received training that costs about \$3,000 in the private market, received a voucher for certification testing, got free course materials, learned to teach the course and learned how to become part of the [VMware IT Academy program](#), which endeavors to help public education deliver needed virtualization knowledge and skills to the ICT workforce.

David Patrick from MPICT Regional Partner Ohlone College taught the course utilizing a remote lab environment hosted by [Network Development Group \(NDG\)](#).



## DESIGNING & USING INNOVATIVE, COLLABORATIVE & FUN APPROACHES TO TEACHING & LEARNING ONLINE

Despite the prevalence of e-learning, recent data show that most online instruction is composed of seatwork and whole-class instruction led by the teacher. Often, students become bored or distracted, their attention wanders, and their learning and class performance suffers. As online instruction grows in importance, it is increasingly important to find and use ways of keeping online students focused and engaged.

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This very hands-on workshop in a computer lab helped faculty explore and leverage the power of low-cost collaborative tools to enhance online instruction and increase student enjoyment and engagement. Faculty worked through a series of design challenges to fundamentally re-think how effective online instruction is developed, delivered and received and walked away from the track with not only a toolkit for increasing online engagement, but also useful course management methods and materials.

Track instructors were Joyce LaTulippe and Lori Weir of [Boston-area Advanced Technological Education Connections \(BATEC\)](#), an NSF ATE Regional Center, like MPICT



Hands-On With Online Teaching & Learning

## DELIVERING HIGH IMPACT, HYBRID ONLINE COURSES

Even in good economic times, it is often difficult for an ICT program to justify many advanced or specialized courses. Often, the equipment and instructor development costs are high, and the student demand at one school may not be large or regular enough. In these difficult economic times, many courses are being cut, especially more specialized and advanced courses which do not routinely fill. Students are being stranded, unable to get the course(s) they need to get the credential they seek in their careers.

Spring semester, [MPICT featured](#) 17 courses offered by community college instructors teaching ICT courses from single schools and making them available to students from many schools. They were delivered in a [hybrid format](#). Students who could attend on time and in person received in person instruction by a professor. Those showing up on time on the Internet (from any computer, with any OS or browser, at any network connection speed) interacted with the class in real-time remotely. Students unable to show up on time had access to class archives. Remote access to real lab equipment was integrated to provide real experiences. Online office hours allowed personalized attention to students anywhere.

To do this, we used Blackboard Collaborate (formerly [Elluminate](#)), offered free to California community colleges with value added services as [CCC Confer](#), but this would work for teachers with access to similar solutions, like [Webex](#), [Adobe Connect](#) or [Wimba](#).

These technologies blow the walls off of classrooms, allowing you to reach and serve students anywhere!

However, as we have observed faculty making use of these platforms, we realize that reforming educational systems and expanding the ICT education capacity of a region is not necessarily what motivates everyone.

What motivates faculty is that by using these platforms they can improve student, course and program outcomes. Student enrollment increases, because more students can participate. Student completion increases, because the multi-modal delivery better meets diverse student learning needs. Faculty satisfaction improves, because teachers no longer have to drive to the office for office hours. Student performance improves, because class archives are available as study tools. Department meetings are less burdensome, because everyone can participate from where they are...

There are amazing and unanticipated stories of success and use of these platforms we could not have foreseen, such as a faculty member saving his job because of increased enrollments that kept his courses from being cancelled, a faculty member with a disabling medical problem who could continue to serve his students, a teacher delivering a class from India, creating international collaborations between students on projects, having high profile industry representatives as remote guest lecturers without having to leave their desks...

Faculty in this track received Moderator training by experts at CCC Confer and MPICT Regional Partner Michael McKeever of SRJC, were exposed to [MPICT's Hybrid Course Delivery Model Toolkit](#) and then worked out with the platform - accomplishing amazing things!



Doing Amazing Things to Improve Course Delivery and Outcomes in Real Time

A main goal of Faculty Development Week is to create community among ICT educators in the region and promote the productive exchange of ideas, practices, contacts, subject matter expertise, curriculum and programs. A Wednesday evening mixer provided opportunities to socialize and make informal and personal connections. Breakfast and lunch together were other opportunities for community building.



Great Connections and Interactions at Meals

Every classroom was in a computer lab, and everyone had lots of opportunities for hands-on practice.

Each morning, at breakfast, the instructors presented to everyone what was going on in individual tracks, so everyone had at least a high level understanding of what the others were learning and doing. Friday morning, there was an open microphone, when people shared information and ideas with the larger group. We agreed to try to continue information sharing through [MPICT's Blog](#), for which everyone is invited to become a contributor.

Because professional development and travel resources have all but disappeared in this difficult economic climate, MPICT provided travel assistance to qualified attending faculty members.

MPICT is grateful to everyone who participated in this event and contributed to its success.

If you attended, please let us know what you do with your new knowledge and experiences!

The goal of the ICT Pathways Symposium was to help community college and high school administrators and faculty learn about Ohlone's model ICT Pathway - and to stimulate activity to build other K-14 ICT Pathways.

The Symposium began with an engaging panel presentation of the Ohlone ICT Pathway Model, which includes the following components:

- Collaborative Middle School, High School and Community College Faculty and Administrator Relationships
- Middle School Introduction to ICT Course
- Middle School ICT Summer Camps
- High School ICT Courses
- High School ICT Summer Boot Camps
- Pathways with Cisco Networking Academies
- Formalized Relationships, Dual/Concurrent Enrollment and Articulation (2+2) with High Schools
- Work on High School A-G Requirements for ICT
- Students Recycling Used Technology (StRUT)



Morning Panel Presentation

Afterwards, morning breakout sessions were divided into best practices "outside the classroom" and best practices "inside the classroom."

### Outside the Classroom

Sonia Martin, Silicon Valley ICT Collaborative ([SVICT](#)), discussed how the ICT Pathway can begin early with week-long middle school ICT Summer Camps. These build interest and awareness in students for taking high school ICT classes. One participant remarked, "The information I learned at the seminars was valuable. Our college recently developed multiple A/S degrees and certificates thanks to the assistance of MPICT. For the past 3 years, I have wanted a Summer Academy for the Computer Science and during this symposium, I learned a lot from Sonia on how to accomplish my goal."

Richard Grotegut showed how ICT Summer Boot camps can engage students and prepare them for industry certifications. Ohlone's 2-4 week boot camps serve as a college orientation, provide ICT industry fields trips, and prepare students who have taken the CCNA Discovery 1 and 2 course sequence to pass the industry CCENT certification exam.

Dennis Smith, [StRUT](#), and George Wong from Ohlone, co-presented how the Silicon Valley Students Recycling Used Technology (StRUT) program provides work-based learning experiences for students through repairing and upgrading donated computer equipment for K-12 schools as part of an ecosystem for an ICT Pathway. Being able to make a real world contribution to improving education is a very valuable and meaningful experience.

### Inside the Classroom

John Bjerke, West Region Area Academy Manager, provided an overview of the Cisco Networking Academy program, which provides free curricula for high school and postsecondary institutions for courses that help students prepare for industry certifications, such as CCENT and CCNA. Having common curriculum makes developing articulated relationships between schools way easier.

Clint Johns, [Irvington High School IT Academy](#), gave an overview of resources and curricula for a 9<sup>th</sup> grade Intro to ICT course, which provides a digital literacy foundation, ICT career exploration and understanding the importance of ICT and ICT occupations in information and innovation economies. If we are going to attract students to strategically important and well-paid ICT careers, we have to reach them early, stimulate their interest and give them exposure and opportunities to learn.

Sheryl Ryder, California Dept. of Education, presented various flavors of how to formalize relationships between K-12 and community colleges, including:

- 1) articulation agreements (2+2), in which colleges accept high school ICT courses as college equivalents and students can proceed directly to more advanced course work,
- 2) Dual enrollment agreements in which high school teachers are qualified by colleges to teach ICT classes for both high school and college credit, and
- 3) Concurrent enrollment agreements, in which high school students are taught by college faculty at the high school or college.

(A female, central valley student recently experienced receiving an ICT A.S. degree one night and her high school diploma the next night. How cool is that?)



*Packed Into a Breakout Session*

After a catered lunch, there were two presentations.

Nilay Ghoghari and Isaac Majerowicz gave a look at the continually developing Cisco Networking Academy portfolio, including Cisco's Aspire simulation and quest game, which builds students' ICT and entrepreneurship skills using a Packet-Tracer based game engine.

Michael McKeever, [Santa Rosa Junior College](#), gave a demonstration remotely to Symposium participants of how [CCC Confer](#), (free to California community colleges), can be used to deliver college courses to high school students remotely, so high school students can get high quality college ICT courses, including access to college labs, without going to the college.

### Take Away Message

A concluding plenary and breakout sessions were devoted to attendees exploring opportunities to build ICT pathways in their communities.

The first step is for local high school and community college faculty and administrators to get together and establish common ground. ICT is important for every business in every industry; there are a wide variety of stimulating ICT careers that support high quality lifestyles; and we need to do a better job exposing students to that early, giving them opportunities to learn while K-12 students and making it easy for them to build on that and continue their studies in college.

With that, pick a project and start. You don't have to try to implement in one semester what it has taken Ohlone a decade to build. Build on successes and grow a pathway!

MPICT will support project efforts with mini-grants (up to \$2,000). If interested, email [info@mpict.org](mailto:info@mpict.org).



*Community College Student Photo From Paris*

For this project, 24 American students were recruited from Santa Rosa Junior College, Ohlone College and City College of San Francisco in California and Truckee Meadows Community College in Nevada, and 18 French students were recruited from CFI in France.

The project was based on Cisco Networking Academy curriculum, because that is common around the world, and it provided a common background on which to build experiences. Students were required to be enrolled in or have completed CCNA4: Accessing the WAN.

Ohlone College offered the specially created course, taught by Michael McKeever from Santa Rosa JC and Danijela Bedic from Ohlone, which was designed as a real world scenario. Students were asked to assume they worked for previously separate wine companies in the U.S. and France, which had recently merged. It was their job to work together to integrate their different network systems into a functional new system. This kind of situation is now common in real world ICT operations.

Classes were delivered through CCCConfer, a California Community College version of the Elluminate (now Blackboard Collaborate) platform. That allowed everyone to interact in real time with teachers and each other to learn the scenario and relevant background. With the time difference, the course was delivered simultaneously at 8am Pacific Time and 5pm Paris time. Students who could not be online in the moment could later review recorded archives of the 8 sessions.

Students were grouped in 6 teams, each made up of 4 American students and 3 French students from the CFI. Teams then tasked to work together to analyze the situation and come up with viable solutions. They had to discover and manage time and cultural differences and find ways to work together remotely. Cisco Packet Tracer enhanced with its Multi-User capability was used for the network environment.



*Student Work Session in Paris*

Thirteen of the American students were selected to travel to France to complete their project face-to-face with their French counterparts and present their solutions to Cisco executives and college professors. A Cisco hosted Telepresence session engaged U.S. students not able to travel to Paris.

CFI students alternate 2 weeks in the classroom and two weeks with ICT employers. Most gain full employment at the completion of their two-year program. American students visited four work sites: (1) the data center of Paris City Hall; (2) a switching center of France Telecom (Orange); (3) the IT center of the Paris Chamber of Commerce and Industry; and (4) the sophisticated network infrastructure of the Société Générale, one of the oldest and largest European financial services companies.



*On the last day of the visit, the American team invited their French hosts to a good bye luncheon.*

Many of the success elements of this project are reproducible to enrich other ICT educational experiences: building relationships between programs at different schools anywhere, finding common backgrounds on which to build experiences, engaging students with real world scenarios, using effective collaboration tools, engaging business partners, integrating real cultural experiences and helping everyone understand the real world relevance.

## HI-TEC Conference in San Francisco, July 25-28



Join us for the [2011 High Impact Technology Exchange \(HI-TEC\) Conference](#), July 27-28, preceded by two days of pre-conference workshops, July 25-26, at the Hyatt Regency San Francisco!

HI-TEC is a national conference hosted by NSF Advanced Technological Education Centers and Projects from around the country to profile and enable good work in "Educating America's Technical Workforce." [www.highimpact-tec.org](http://www.highimpact-tec.org)



MPICT co-chairs the event, which has a strong ICT [Program](#):

- a [trip to Cisco headquarters](#)
- Ethical Hacking workshop
- Mobile Networking workshop
- MPICT's International Capstone Exchange
- Improving (ICT) Student and Educator Outcomes With Online Collaboration Tools
- High School Cyber Security Skills Competitions
- How to Jumpstart a Virtualized Network Program
- VMware IT Academy and Virtual Labs With NETLAB+
- Developing a Skill Standards-Based Curriculum
- Teaching Basic Digital Logic with Field Programmable Gate Arrays (FPGA)
- Adding Business Intelligence to your Toolkit
- Emerging Broadband Technological Developments
- Systems Analysis
- Smart Grid: Convergence of ICT and Electrical Tech

## Call for New MPICT Regional Partner!

The Mid-Pacific ICT Center is governed by its [Regional Leadership Council \(RLC\)](#), consisting of (City College of San Francisco) [Center staff and \(Co-\) Principal Investigators](#) - and its [Regional Partners](#).

MPICT had 4 original Regional Partners: Cabrillo College, Santa Rosa Junior College, Ohlone College and Foothill College, which together with CCSF encompass the San Francisco Bay Area.

Since then, MPICT added as Regional Partners Truckee Meadows Community College in Reno, NV, which represents higher education in Nevada, and Kapiolani Community College in Honolulu, HI, which represents higher education in Hawaii.

This year, MPICT would like to add a new Regional Partner, representing Oregon higher education – or a Regional Partner with a very high quality ICT education practice that we could work together to scale out to others in the MPICT region.

Regional Partners are compensated to participate in Center governance through the MPICT Regional Leadership Council (RLC). Additionally, Regional Partners are invited to co-lead Center efforts to positively impact ICT education in northern California, northern Nevada, southern Oregon, Hawaii and the Pacific Territories. The Center funds additional work as projects.

We would prefer someone at a community college who already has serious momentum in a quality ICT education practice, which could be scaled through the Center to quickly make an impact throughout the region. We are also interested in people who would help us make significant progress in the Center's currently stated goals:

1. Develop partnerships among higher education institutions to increase and improve the region's ICT education capacity.
2. Deepen and expand collaboration with industry to create an ICT workforce that fully meets the region's economic needs.
3. Identify, implement and disseminate ICT education best practices in the region, working towards a standardization of ICT competencies, skills and education approaches.
4. Develop fully articulated ICT education pathways and work to implement them throughout the region.
5. Expand, diversify and improve the region's ICT workforce.
6. Enhance linkages to global ICT educators and employers.



If you are a community college educator at an ICT related program in the MPICT region interested in learning more about this opportunity, or if you would like to recommend someone for this opportunity, please email us at [info@mpict.org](mailto:info@mpict.org).