



# City College of San Francisco

## Collaborations to Advance ICT Education

March 12-14, 2007 • La Jolla, CA  
[cenic07.cenic.org](http://cenic07.cenic.org)



# Presented By



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# City College of San Francisco



- **> 50 Academic Programs & > 100 Occupational Disciplines**
- **> 4,700 Courses Offered**
- **> 106,000 Students Annually**
- **> 10 Major Neighborhood Campuses**
- **> 150 Other Instructional Sites Citywide**
- **> 700 Full-time & > 1,100 Part-time Faculty**
  - 95% with Master's Degrees & Almost 250 Ph.D.s
- **46 Administrators & 882 Classified Employees**
- **2-Year Public College**
- **Western Association of Schools & Colleges (WASC) Accredited**
- **Associate of Arts (AA) & Associate of Science (AS) Degrees**



# Metro Area Network



- 12 Fiber Strands (CENIC Model)
- Partnership with SF DTIS
  - 20 Years
- 35 Mile Redundant Ring
  - Highly Reliable
- 24x7x365 Monitoring
- 1Gbps Initial Bandwidth
- Virtually Infinite Growth Potential
- Connects 200 Paul Data Center

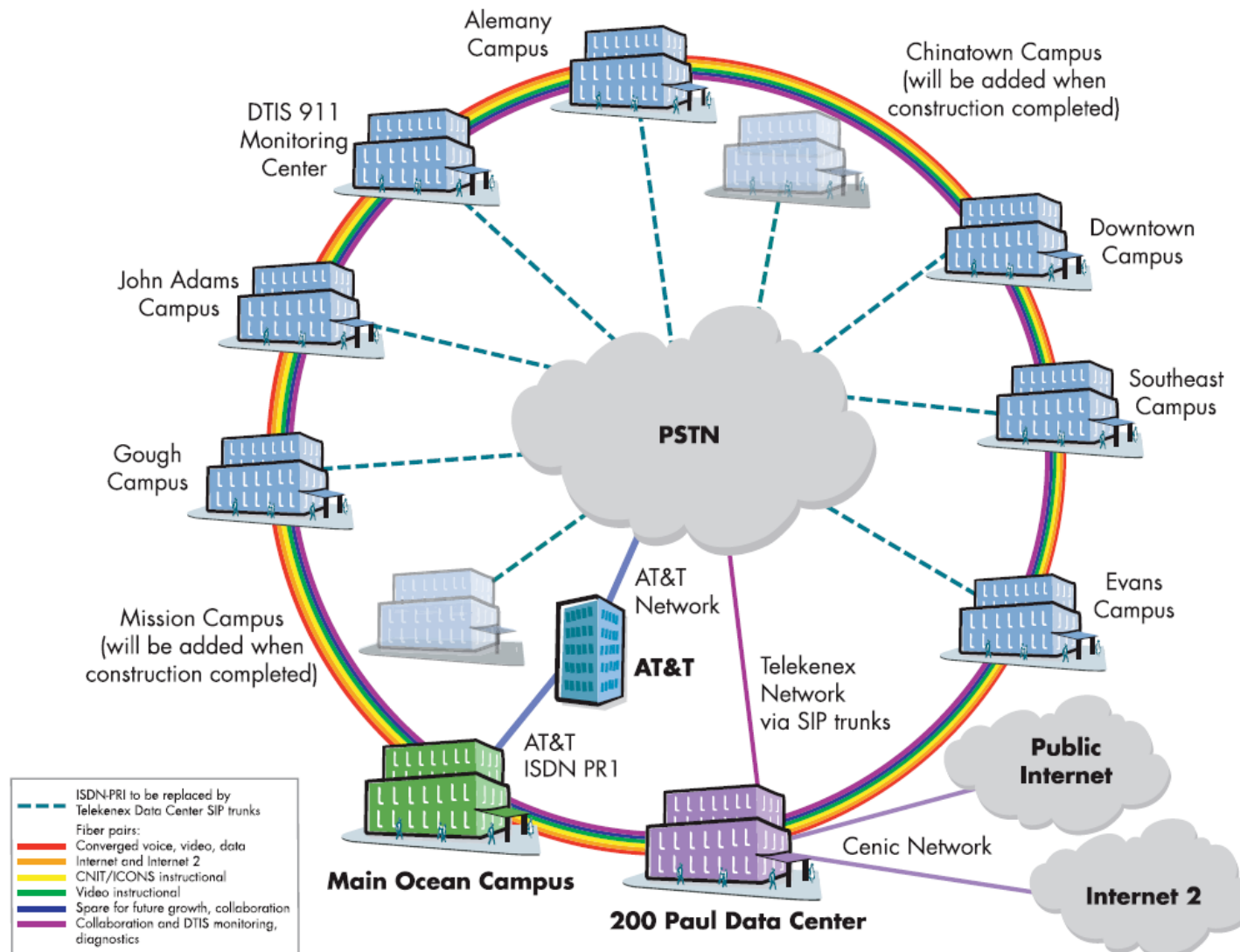
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- CENIC Award Winning



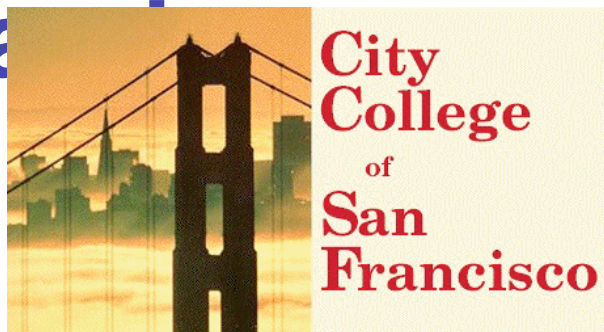
- Gigabit Ethernet Cross-connect  
To CENIC @ Collocation Center  
On Metro Area Network
- Avoid Access Circuit Charges
- California Community College  
System Provides 90Mbps Internet  
Bandwidth
- 1Gbps Access to Internet2

# Voice Network



- VoIP Telephone System
- 2000 Handsets
- Internal Traffic on LANs & MAN
- External Traffic via SIP Trunks

- **How do we best leverage information and communications technology infrastructure improvements for the academic benefit of students and faculty?**

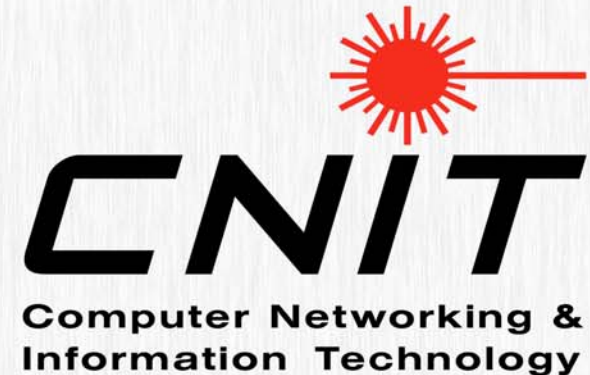


# Engage CNIT Department



## DEPARTMENT FACTS:

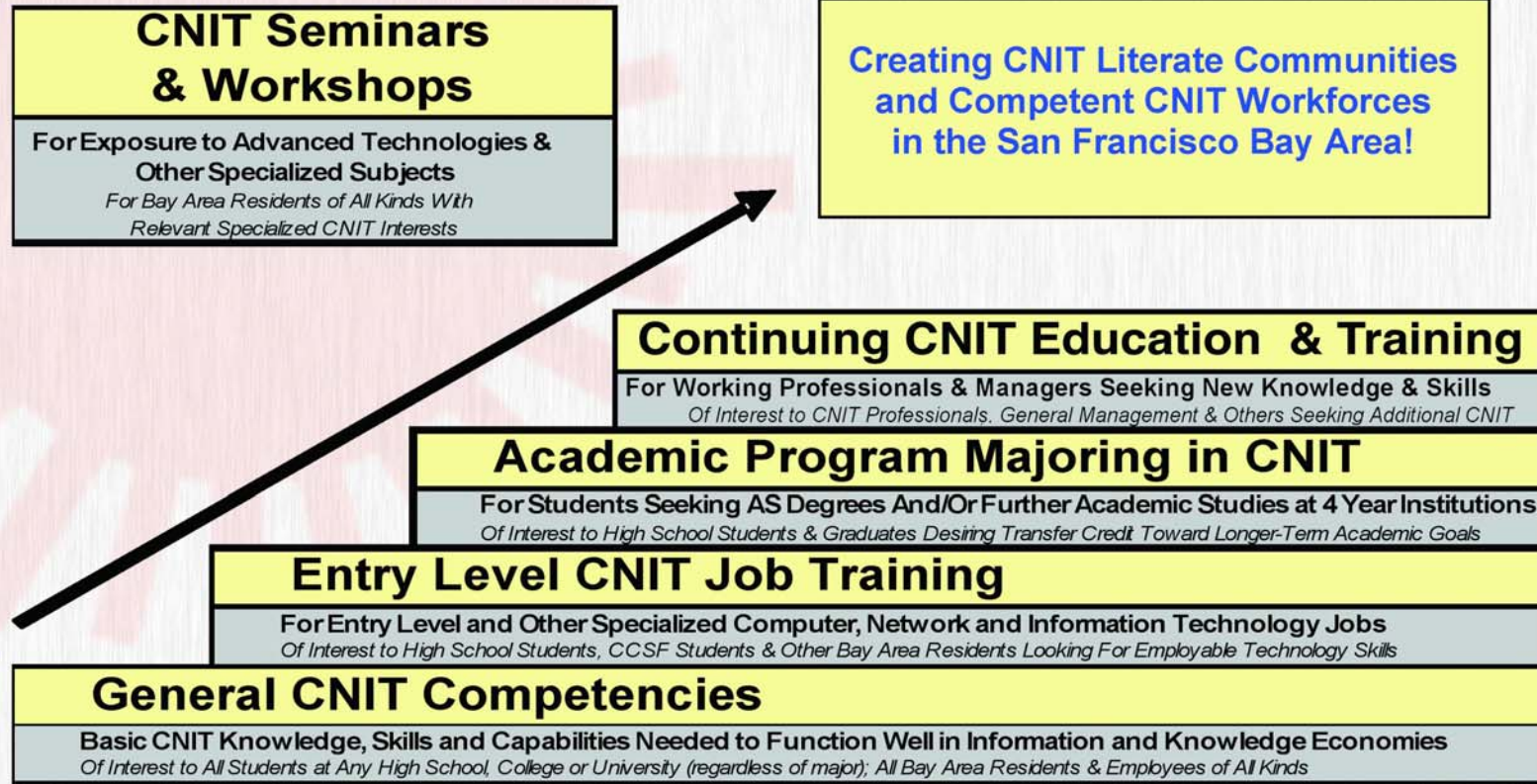
- Created in 2002 & Evolving Quickly
- 23 Outstanding Faculty Members
- More than 2,100 Students Annually
- 56 Courses - roughly 1/3 available in online or blended formats
- 10 Academic Certificates
- 13 Industry Certifications
- Cisco Regional Network Academy
- AS Degree (Fall 2006, Pending State Approval)
- Transfer to B.S. in I.T. degrees at CSU Channel Islands & Monterey Bay
- Building Bridges to Enable CNIT Competencies Everywhere



# Computer, Network & IT Department



## CNIT Education & Training Services at City College of San Francisco



**CNIT provides knowledge and skills to succeed and prosper in our modern information and knowledge economy!**

# Establish ICONS w NSF Funding



*CNIT Chair Carmen Lamha with  
San Francisco Mayor Gavin Newsom  
At Press Event Announcing ICONS*

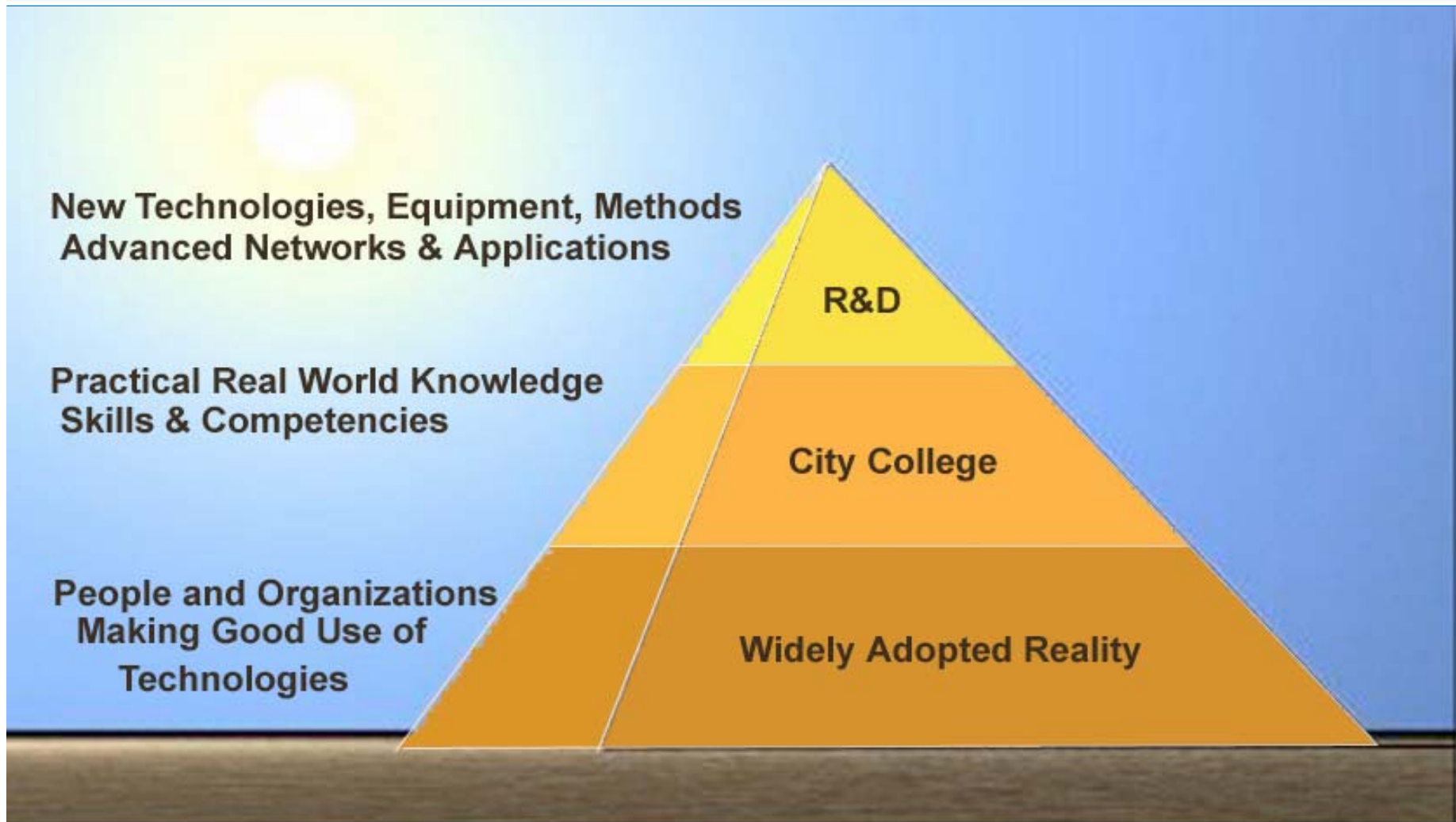


## **ICONS**

**Institute for Convergence of  
Optical & Network Systems**

- **NSF ATE Project**
- **\$750,000 over 3 years**
- **Convergence Technician Training**
- **Utilize ICT Infrastructure for Hands-On**
- **Cost-Effective Skill & Knowledge Transfer for Economic Advancement**
- **Dr. Pierre Thiry, Principle Investigator**
- **Carmen Lamha, Chair CNIT Dept & Co-PI**

# ICT Pyramid

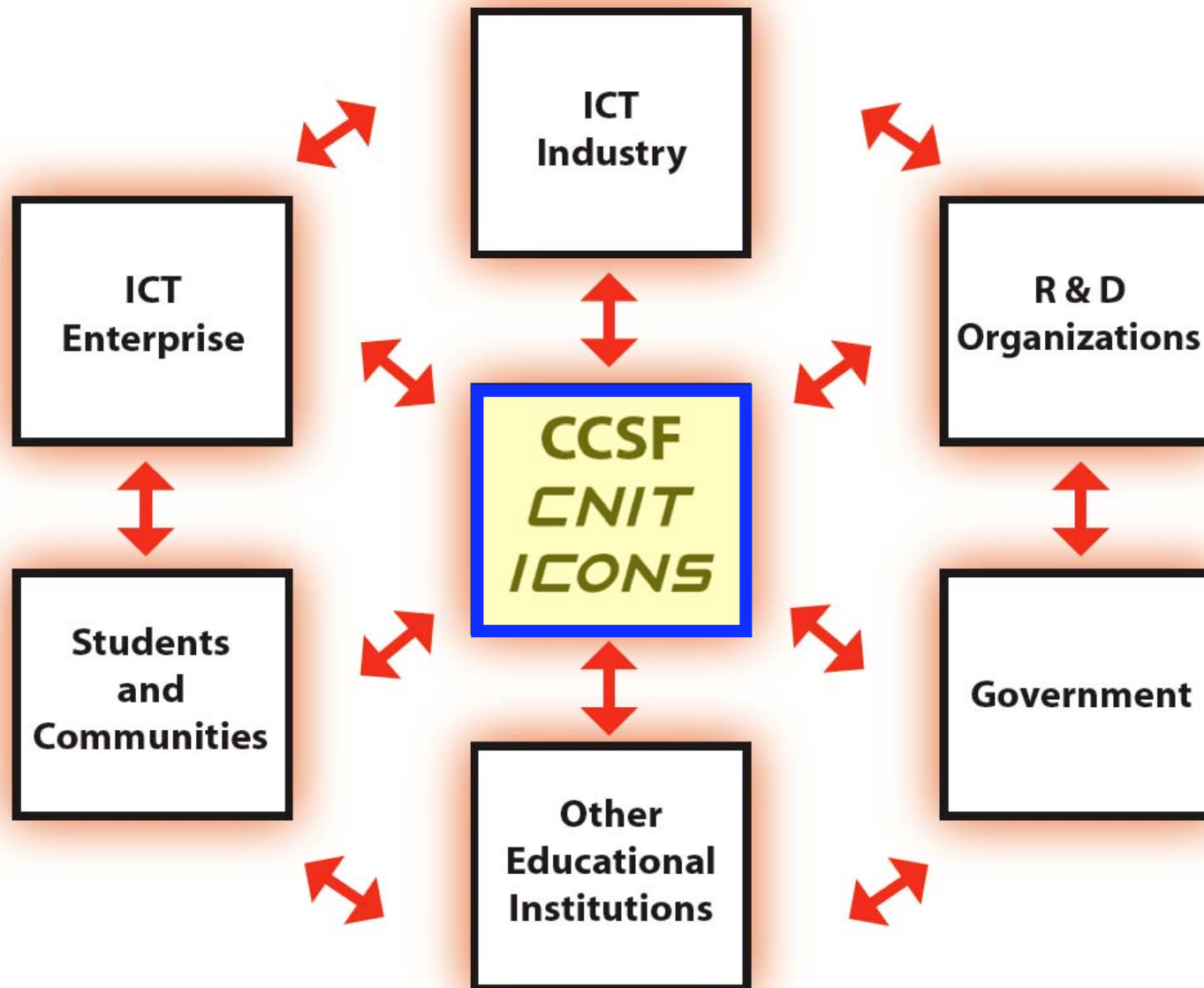


# Advisory Panel



- CCSF
- Service Providers
- Educational Institutions
- Equipment Manufacturers
- Private Enterprises
- Standards Bodies
- Community Non-Profits
- Government



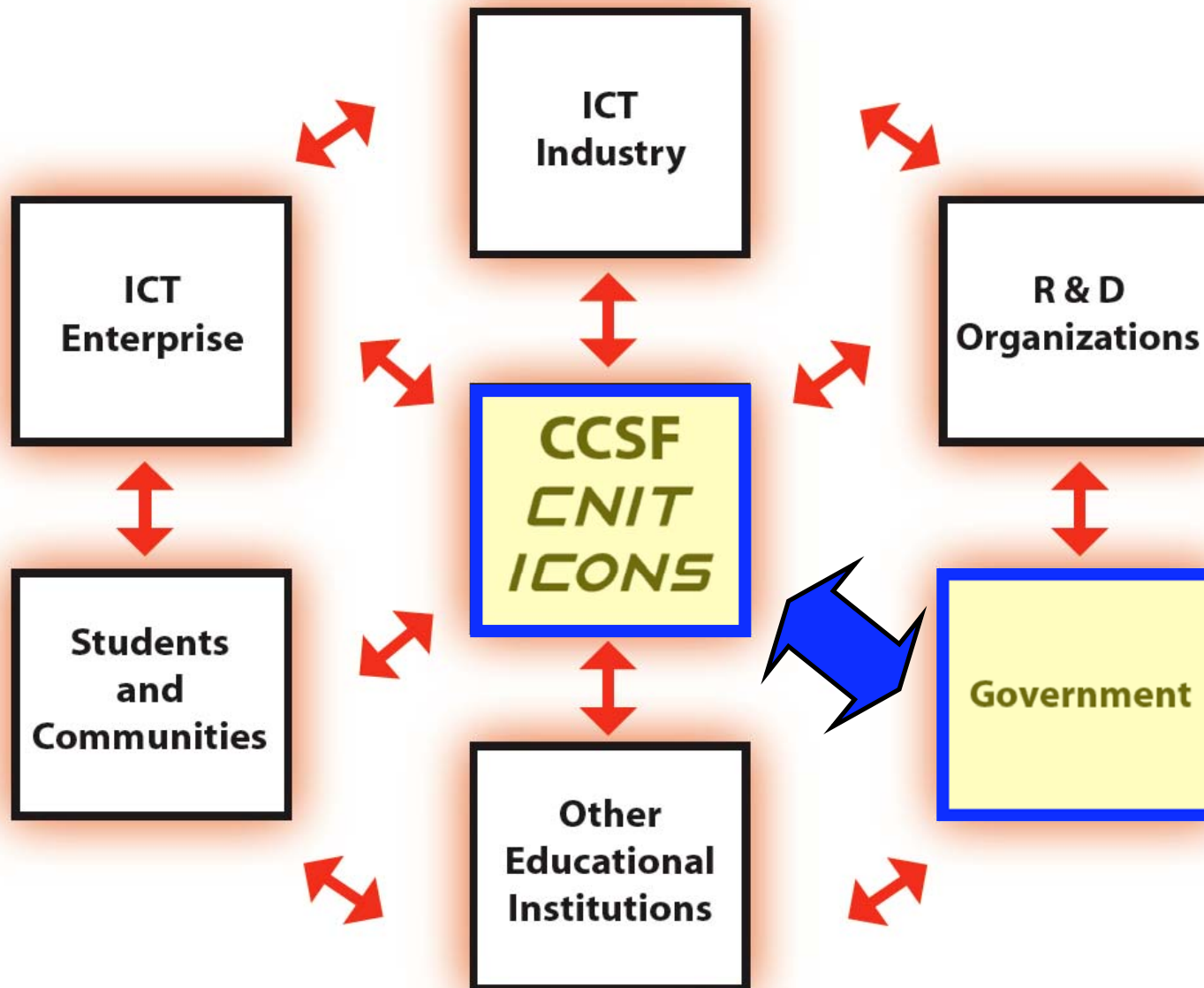


# Collaboration & Effort at CCSF



- Comprehensive Review & Upgrade of CNIT Curriculum
- Addition of New Courses
  - Fiber Optics
  - Voice over IP (VoIP)
  - Ethical Hacking and Network Defense
  - Operating Juniper Routers in the Enterprise
- Addition of ICT AS Degree & Certificate
- Expand Career Opportunities in collaboration w Career & Placement Center & Web-Based Career Connection
- Summer 2006 Convergence Workshops
- Improved Marketing & Communications
- Improved Lab Facilities

# Collaborations with Government



# Collaborations with Government **ATE**CENTERS



- Project Funding
- Ties to Other Projects
- Affiliation w ATE Centers
- Event Participation
- Structured Governance
- Enhanced Prestige



Educational Funding for  
Community Colleges

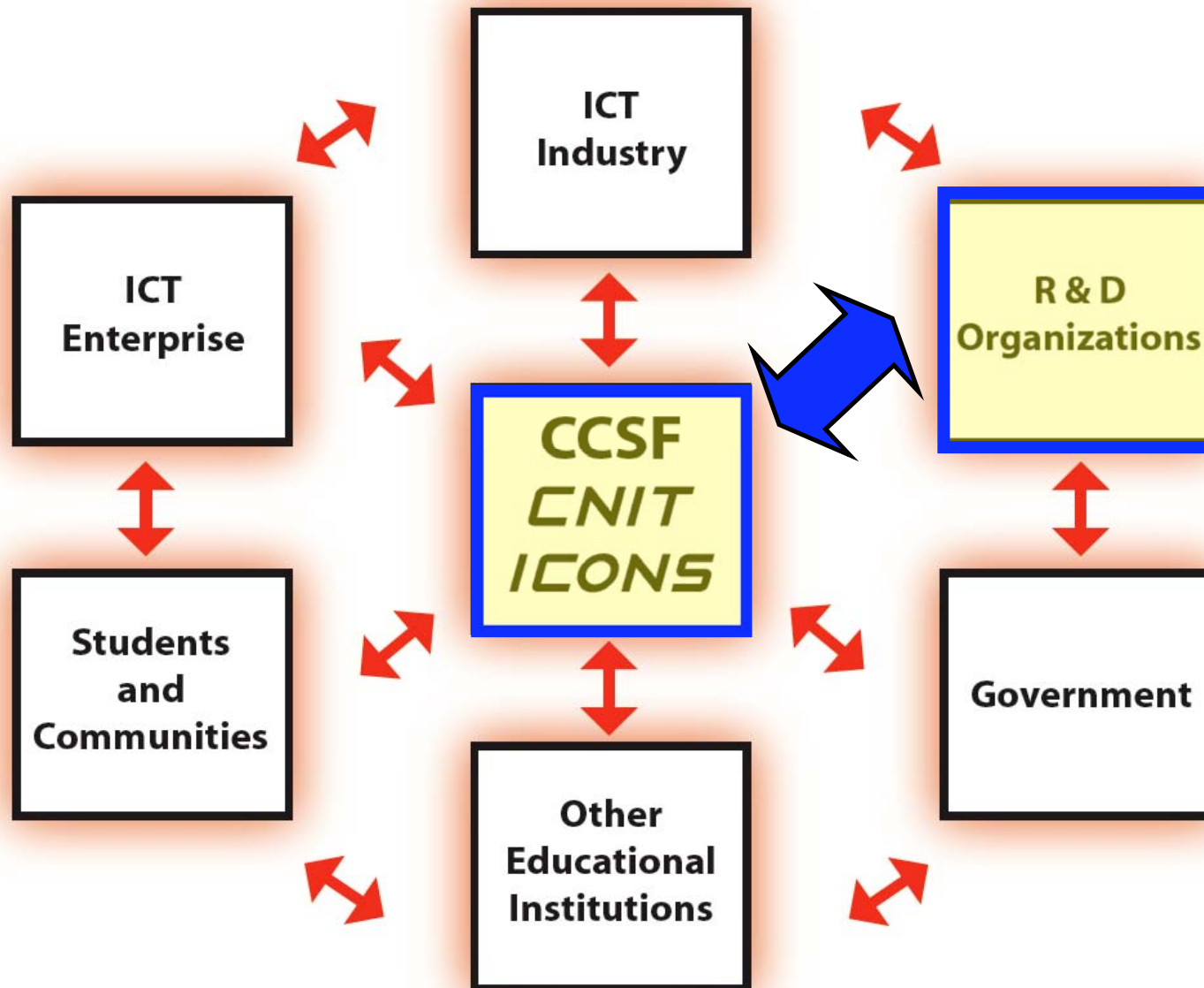


Metro Area Network Partners, Digital Divide Issues, TechConnect Project Support, Ties to Other Community Groups, Advisory Panel Contributions



Data & Assistance on ICT Technician Demand, Salaries, Contract Rates, Employment Benefits, Job Availability, Job Placement

# Collaborations w R&D



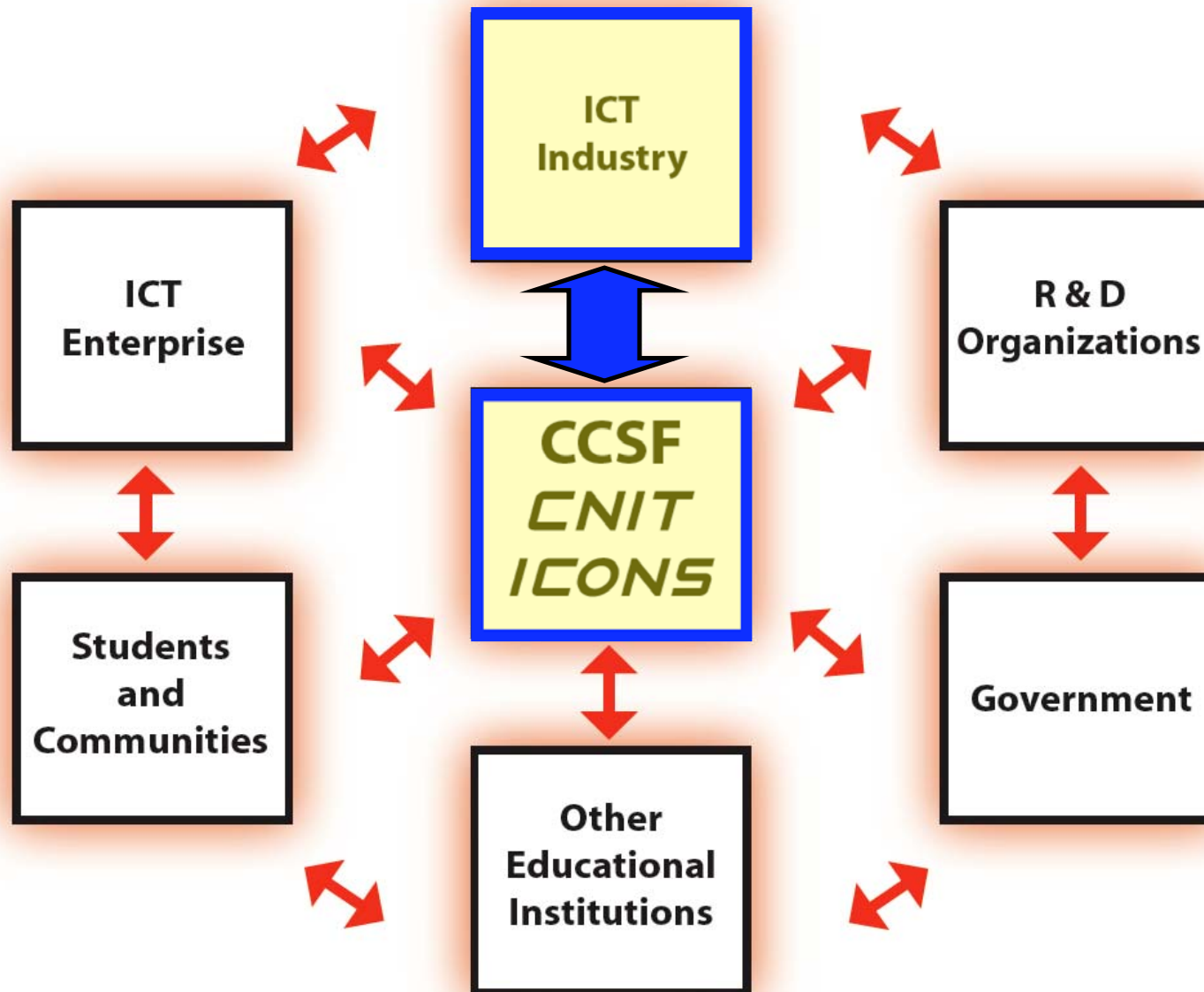
# Collaborations with R&D



People & organizations advancing technology

- IEEE & IEEE ComSoc
- Metro Ethernet Forum
- Other Standards Bodies
- Academic Research
- Industry Research (Silicon Valley)
- CENIC (Advanced Networks)

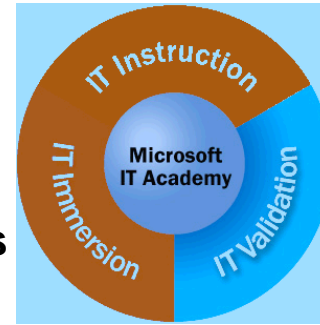




# Collaborations with ICT Industry



- Advisory Panel Participation
- Input on Curriculum
- Insight Into Technology Trends
- Information on Jobs
- Internship Opportunities
- Mentoring Relationships
- Service Learning
- Job Placement
- Student Site Visits
- Help Expanding Relationships
- Equipment & Courseware Contributions
- Event Speakers



**CNIT Becomes Microsoft Academy!**



**Cisco Academy Expansions!**

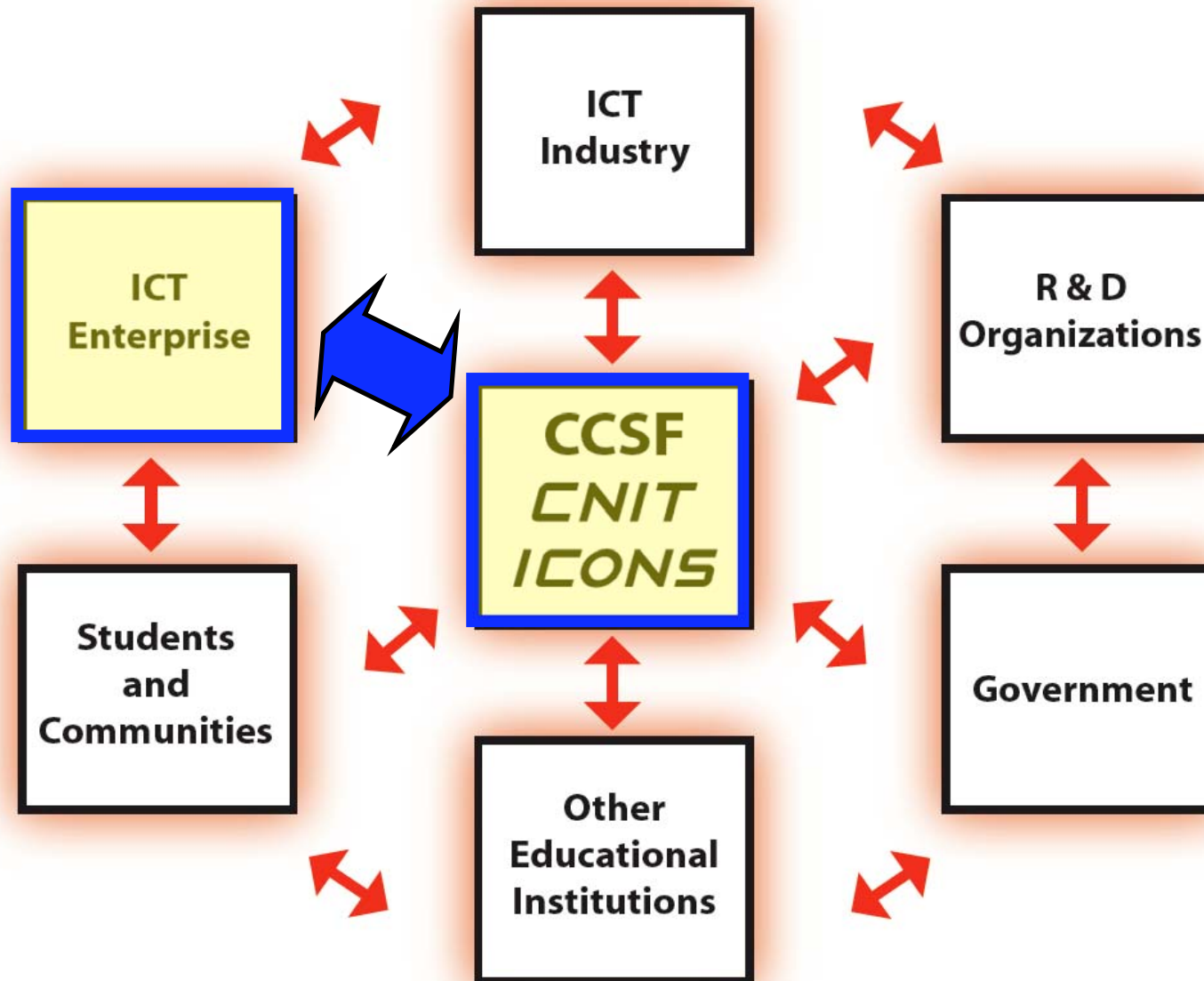


**CCSF Becomes 1<sup>st</sup> Juniper Networks University Center in North America!**



**CNIT Becomes Pearson VUE Authorized Center (PVAC) For Testing**

# Collaborations w ICT Enterprise



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National Institute for Women in Trades, Technology & Science

- **CalWomenTech NSF Grant**

- Institute for Women in Trades, Technology & Science (IWITTS - [www.iwitts.com](http://www.iwitts.com))
- Carmen Lamha, Co-PI

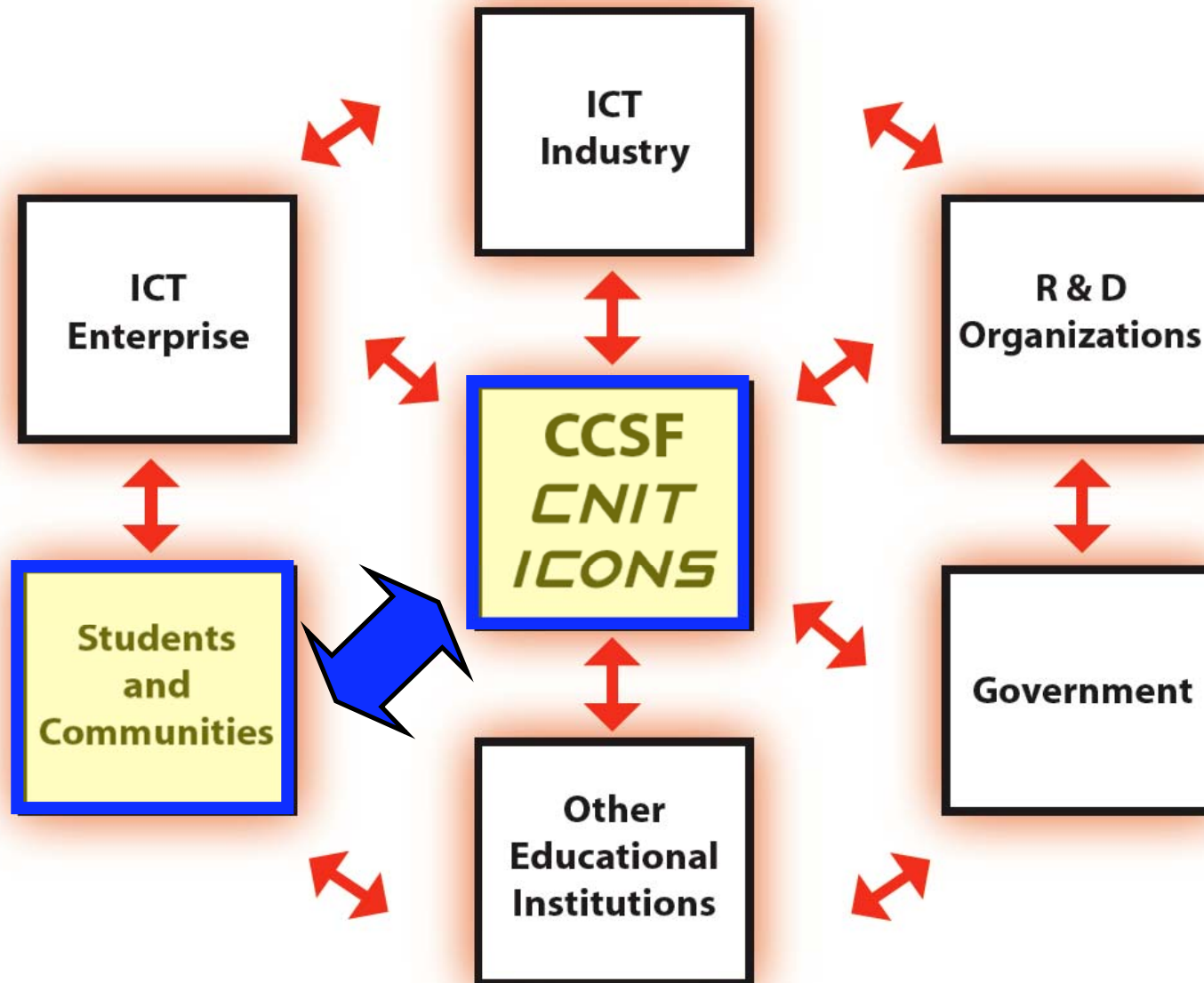
- Increase # of women in Science and Technology education
- Develop new gender equity “technology” i.e. curriculum taking into account female interests and learning styles
- Develop best practices for recruitment and retention of women
- Institutionalize gender equity strategies beyond life of Project
- State/National Dissemination & Gender Equity Lending Library

Help guide program success & curriculum development, Provide guidance on workforce development, Develop internship relationships, Job

Placement...



# Collaborations w Students/Community



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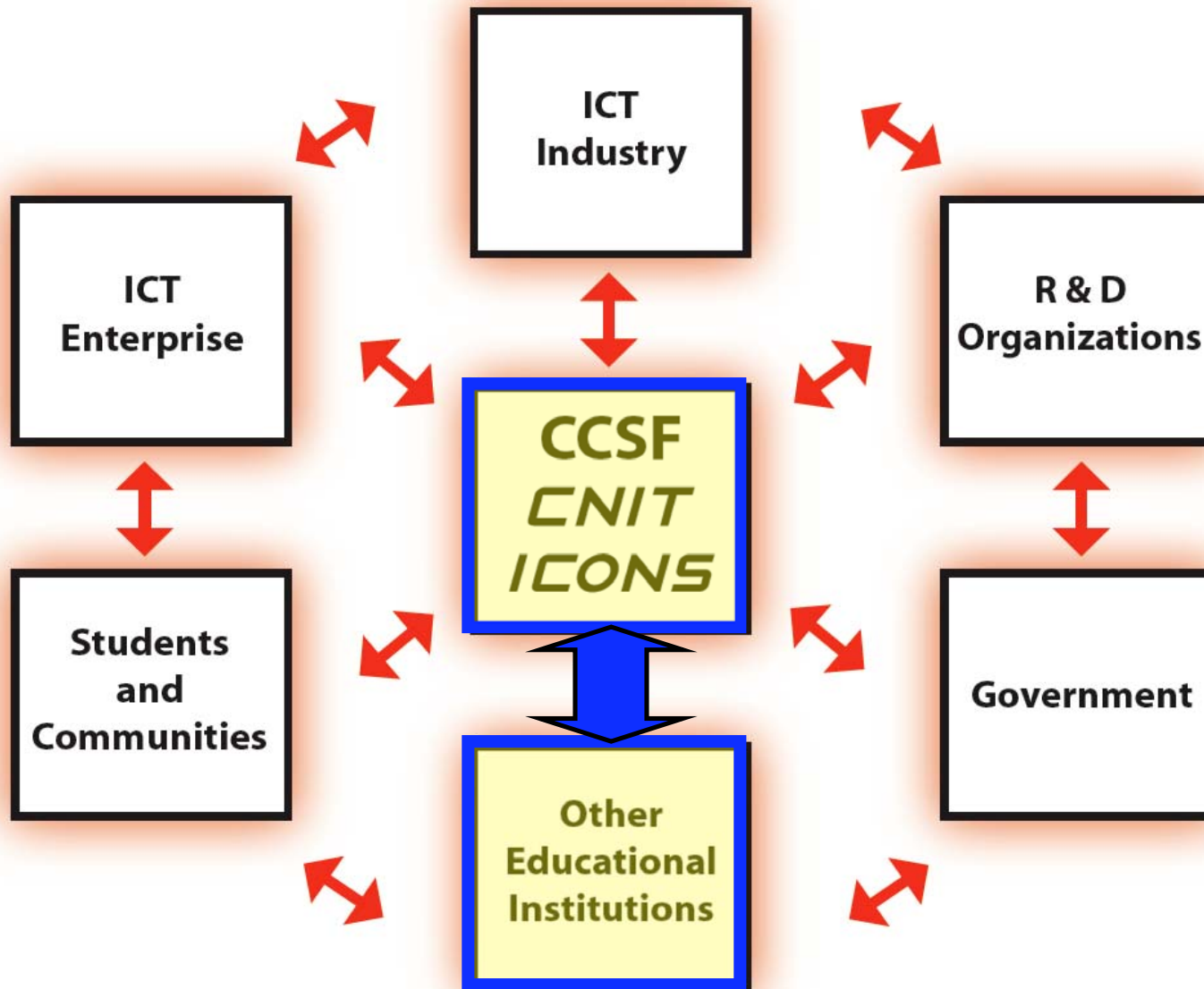


- Demonstrate Value in Voter Bond Expenditures
- Summer 2006 Convergence Workshops
  - Provide Community Exposure to Advanced Technologies
- Establish IEEE Student Chapter at CCSF



- SeaKay relationship where CNIT students assist in Neighborhood Network Centers to Benefit Digital Divide Public Service Goals
  - Alice Griffith Community Center WiFi Installation
  - Students Support 3 Neighborhood Network Centers

# Collaborations with Education



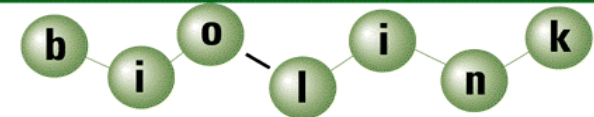
# Collaborations with Education



- Expand outreach to High Schools –
- School to Career via HS IT Academies.
- Promote access to education in ICT.
- CNIT 131 (Internet & HTML Basics)



- Developing transfer relationships for CNIT students to get BS degrees
- Articulation Officers Working to Align Courses & Formalize Agmt



## *Educating the Biotechnology Workforce*

- National ATE-Center since 1998
- 7 Regional partners nationwide
- Assist ICONS by sharing
  - best practices, experiences & resources
- Role in SF Biotech Industries



- NSF ATE Center
- Large Network of ICT Colleges
- ICONS Hosted NCTT Winter 2007 Conference 1/12-13/07 at CCSF

# Call For Collaborations!



## Call for Proposals for Collaboration!

- Proof of Concept Research Using CCSF Infrastructure
- Participation in ICONS' Advisory Panel
- Development of ICT Lab & Equipment Resources
- Development of Technician Training Programs & Courses
- Network Resource Sharing & Interactions via Internet/Internet2
- Articulation and Transfer Relationships
- Internship, Mentoring and Service Learning Opportunities
- **Educating Tomorrow's ICT Technicians Today!**