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Preview of Award 1042341 - Annual Project Report

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Cover

Federal Agency and Organization Element to Which Report is Submitted:	4900
Federal Grant or Other Identifying Number Assigned by Agency:	1042341
Project Title:	BPC-AE: Computing Alliance of Hispanic-Serving Institutions
PD/PI Name:	Ann Q Gates, Principal Investigator Malek Adjouadi, Co-Principal Investigator Mohsen Beheshti, Co-Principal Investigator Ahmed M Mahdy, Co-Principal Investigator Enrico Pontelli, Co-Principal Investigator
Recipient Organization:	University of Texas at El Paso
Project/Grant Period:	09/01/2010 - 05/31/2018
Reporting Period:	09/01/2016 - 08/31/2017
Submitting Official (if other than PD\PI):	N/A
Submission Date:	N/A
Signature of Submitting Official (signature shall be submitted in accordance with agency specific instructions)	N/A

Accomplishments

* What are the major goals of the project?

The goals of CAHSI are listed below:

1. To institute a sustainable infrastructure that supports CAHSI's continued impact.

- 1.1 Establish the cyber-infrastructure (CI) to support collaborations, resource discovery and sharing professional development, and expanded participation.
- 1.2 Enhance collaborative research and education infrastructure at CAHSI institutions.
- 1.3 Establish a methodology/framework for adoption of CAHSI best practices and their dissemination, including K-12 initiatives.
- 1.4 Align CAHSI goals & contributions to local, state, & national priorities and initiatives.
- 1.5 Align CAHSI educational goals with student skills that industry values.

2. To become recognized as an organization that affects decision-making, policy, & cultural change.

- 2.1 Establish mutually beneficial collaborations, in particular those with advocacy groups.
- 2.2 Involve upper administration at CAHSI institutions in discussions about the value of diverse thought, experiences, and approaches with respect to students, faculty, and research.

3. Incubate the next generation educational tools that prepare students for success in STEM.

- 3.1 Provide a framework to systematically nurture and shepherd the development, evaluation, and dissemination of effective pedagogical interventions aimed at enhancing K-12 students' understanding of STEM-related foundational concepts.

*** What was accomplished under these goals (you must provide information for at least one of the 4 categories below)?**

Major Activities: The major activity has been the change to the Collective Impact model through the NSF Inclusion across the Nation of Communities of Learners (INCLUDES). The INCLUDES project, which is led by CAHSI, has the vision of reaching 20 percent Hispanic representation of individuals earning credentials (certificates, associate degrees, bachelor's degrees, and graduate degrees) and advancing in computing-related fields by 2030. CAHSI's efforts in documenting and disseminating its effective practices, as detailed in the section labeled Opportunities for Training and Professional Development provided below.

Specific Objectives: A brief statement is made about CAHSI efforts to meet its objectives this year.

1. To institute a sustainable infrastructure that supports CAHSI's continued impact.

1.1 Establish the cyber-infrastructure (CI) to support collaborations, resource discovery and sharing professional development, and expanded participation.

CAHSI is in the process of updating its website to improve access to materials and provide the ability of faculty to create profiles that will allow users to identify experts in particular areas. The infrastructure will also support creation of communities of practice.

1.2 Enhance collaborative research and education infrastructure at CAHSI institutions.

This year, CAHSI has established collaborative research projects in the area of cybersecurity across CAHSI.

1.3 Establish a methodology/framework for adoption of CAHSI best practices and their dissemination, including K-12 initiatives.

Nothing new to report

1.4 Align CAHSI goals & contributions to local, state, & national priorities and initiatives.

CAHSI has established a set of common goals at its All Hands meeting in July 2017. The common goals are as follows:

1. Challenge students' knowledge, skills, and abilities so that they are positioned to thrive in the workforce.
2. Support pedagogical and professional growth for those who can impact Hispanics.
3. Expand meaningful partnerships that align with strategic regional and national efforts.
4. Inform policy through evidence.

CAHSI's revised vision is: By 2030, achieve 20 percent or more representation of Hispanics who earn credentials in computing.

1.5 Align CAHSI educational goals with student skills that industry values.

CAHSI provides professional development efforts to build students technical and professional skills. A collaboration with UTEP, NMSU, CSU-DH, and Google is focused on developing three 1-credit hour courses in problems: problem solving in our every day world, problem solving from a computational thinking perspective, and problem solving from an algorithmic thinking perspective.

2. To become recognized as an organization that affects decision-making, policy, & cultural change.

2.1 Establish mutually beneficial collaborations, in particular those with advocacy groups.

CAHSI has developed a strong relationship with Excelencia in Education, the Latino Smithsonian Center, and Curated Pathways (YWCA and Hewlett Packard Enterprise).

2.2 Involve upper administration at CAHSI institutions in discussions about the value of diverse thought, experiences, and approaches with respect to students, faculty, and research.

CAHSI leads debrief and involve the upper administration on CAHSI efforts.

3. Incubate the next generation educational tools that prepare students for success in STEM.

3.1 Provide a framework to systematically nurture and shepherd the development, evaluation, and dissemination of effective pedagogical interventions aimed at enhancing K-12 students' understanding of STEM-related foundational concepts.

In progress.

Significant Results: The significant results this year is the establishment of a common agenda (vision, mission, and goals) and agreement of the structure of CAHSI as it expands. CAHSI has expanded its membership and involvement with 2-year colleges and other HSIs that include: University of California Merced, Fresno State University, California State University Long Beach, California State University Stanislaus, San Francisco State University, Merced College, El Camino College, West Los Angeles College, Los Angeles Southwest College, New Mexico State University Alamogordo, Dona Ana Community College, California State University Los Angeles.

Key outcomes or Other achievements: A key outcome is the expansion of CAHSI through inclusion of two-year colleges and addition of new four-year colleges. The new partnership with Great Minds in STEM has resulted in new partnerships with industry, including Google, Lockheed Martin, Verizon, GM, Hewlett Packard, and others. An S-STEM grant with CSU-Staislaus and Merced College is building collaborations in cyber security and providing co-curricular activities centered on cyber security.

*** What opportunities for training and professional development has the project provided?**

The list of training and professional development efforts of CAHSI are provided below:

- August 27, 2016: ARG Orientation, Nayda Santiago, 28 participants
- August 27, 2016: Introduction to Research and Graduate School , Nayda Santiago, 28 participants
- August 27, 2016: The Research Process, Nayda Santiago, 27 participants
- August 27, 2016: Conducting Literature Review, Nayda Santiago, 27 participants
- August 30, 2016: The Power of Diverse Teams: Invited talk from BeLeaderly (women's leadership coaching organization) that focused on the benefits and challenges of working on diverse teams. Ann Gates described how to build effective teams using the ARG model; over 300 participants from USA, Canada, Dubai, Russia, Brazil, Puerto Rico, and numerous from Mexico
- September 28, 2016:
- October 6, 2016: Affinity Research Group Model: Preparing Students for the Workforce through Undergraduate Student Research– Nayda Santiago and Ann Gates presented a workshop at the CAHSI Summit (HENAAC) to new adopters, 20 participants
- October 6, 2016: Peer-Led Team Learning: Supporting Students in the Classroom – Mitsue Nakamura gave an introduction on PLTL and how to train students

- October 6, 2016: Fellow-Net: Applying for Competitive Fellowships – Enrico Pontelli and Ann Gates presented a workshop on how to write a competitive personal and research statement using critique of sample statements and hearing from past awardees.
 - December 22, 2016: Elevator Speeches - Salamah Salamah and Ann Gates conducted a workshop to the NSF Scholarship for Service Scholars on how to give an elevator speech to people with different perspectives (manager, recruiter, program officer, administrator), 4 participants
 - October 17, 2016: Jumpstarting Your Research - Natalia Villanueva Rosales presented an ARG workshop to develop skills for IDR collaborations targeting UG, graduate students members of her research group, 14 participants.
 - August 31, 2016, Critical Thinking, Nayda Santiago, 27 participants
 - September 2, 2016, NSF GRFP Fellowship Program: Putting Together a Competitive Packet – Isela Ocegueda, John Wiebe, Bruce Cushing, and Ann Gates presented a workshop to seniors and first year graduate students on how to put together a competitive GRFP packet; students have their packets reviewed by several faculty members, 40 participants
 - September 7, 2016, 6:00pm-7:30pm, S228, Leadership, 29 participants
 - Feb 18, 2017: Algorithmic Thinking, Nayda Santiago, 40 participants
 - Feb 18, 2017: Software Design, Nayda Santiago, 40 participants
 - Feb 18, 2017: Academic and Industry Path, Nayda Santiago, 30 participants
 - February 24-25, 2017: Affinity Research Group workshop – Presented by Elsa Villa, Salamah Salamah, Ann Gates, and Melanie Martin - workshop to support adoption of ARG to University of California, Merced, Merced College, California State University Stanislaus, and Fresno State; presented to faculty students, 45 participants
 - Mar 7, 2017: Diversity, Nayda Santiago, 30 participants
 - Mar 9, 2017: Oral Presentations, Nayda Santiago, 33 participants
 - April 6, 2017: Affinity Research Group Model – Ann Gates presented a workshop on the fundamentals of running an ARG; presented to the Academic Careers Workshop sponsored by CMD-IT, CAHSI, and AccessComputing, 25 participants
 - April 9, 2017: Building Effective Teams, Invited workshop at Rochester Institute of Technology – Ann Gates presented a workshop to graduate students and faculty on how to build effective teams using the ARG model, 15 participants
 - April 21, 2017: Interdisciplinary Research Collaboration – Smart Cities Exchange Program: Natalia Villanueva Rosales presented an ARG workshop to develop skills for interdisciplinary collaborations for participants of the US-Mexico Smart Cities Exchange Program targeting UG, graduate students and faculty, 37 participants.
 - April 26, 2017: Affinity Research Groups – presented to the Innovate Teaching Series at the University of Texas at El Paso; Elsa Villa and Ann Gates presented an introduction to the ARG model, 20 participants
- The Peer-Led Team Learning International Society (PLTLIS) Sixth Annual Conference in Chicago, Illinois, was held from June 1 to June 3, 2017, at Northeastern Illinois University (CAHSI partner). CSU-DH and UH-D have been major contributors to the conference. The UH-D PLTL leaders presented posters at PLTLIS.

In addition, UH-D conducted in-class PLTL workshops every week for CS1 for 25 students. CS2 students were required to attend at least 3 online workshops during the semester (9 PLTL workshops were offered).

*** How have the results been disseminated to communities of interest?**

CAHSI has been disseminated through the following venues:

September 28, 2017, Invited talk (A. Gates) to students and faculty at Purdue University, *Building Effective Diverse Teams*

October 21, 2017 Grace Hopper Celebration panel (A. Gates), *Finding the Bright Spots: Insights on Recruiting, Retaining & Advancing Women of Color in Tech*

September 16, 2016, Tapia 2016 panel (Gates), *Increasing Diversity in Computing--Sharing of Best Practices*

September 19, 2016, Invite talk (Gates) at the Division of Graduate Education Open House (in person and webcast participation), *Broadening Participaton in Graduate Stuies*

INCLUDES (summarize these presentations)

*** What do you plan to do during the next reporting period to accomplish the goals?**

The grant has completed its goals. The extension is to expend the funds for sending students to the 2017 CAHSI Summit held with the 2017 HENAAC conference.

Products

Books

Book Chapters

H. Thiry and S. Hug (2015). Inclusive computing communities: Lessons learned from the Latina double bind. *Girls and women of color in STEM: Navigating the double bind* B. Polnick, B. Irby, and J. Ballenger. Information Age Publishing Inc.. Charlotte, NC. . Status = PUBLISHED; Acknowledgement of Federal Support = Yes ; Peer Reviewed = Yes

Patel, K., Shah, H, Dcosta, M., & Shastri, D. (2017). Evaluating NeuroSky's Single-Channel EEG Sensor for Drowsiness Detection. *n Human-Computer Interaction. New Trends* Springer Berlin Heidelberg. 243. Status = PUBLISHED; Acknowledgement of Federal Support = Yes

Inventions

Journals or Juried Conference Papers

A. Al-Jarrah, E. Pontelli, C. Jeffery (2015). The Collaborative Virtual Affinity Group Model: Principles and Design. *International Journal of Technology Design and Education*. . Status = PUBLISHED; Acknowledgment of Federal Support = Yes ; Peer Reviewed = Yes ; ISBN:

Gates, A., Thiry, H., and S. Hug (2016). Reflections: The Computing Alliance of Hispanic-Serving Institutions. *ACM Inroads Magazine*. 7 (4), . Status = PUBLISHED; Acknowledgment of Federal Support = Yes ; Peer Reviewed = Yes ; DOI:

Licenses

Other Conference Presentations / Papers

S. Mehrazarin, K. Leyba, J. Han, M. Beheshti (2016). *A MacBook Based Earthquake Early Warning System*. IEEE International Conference on Computer Communications. San Francisco, CA. Status = PUBLISHED; Acknowledgement of Federal Support = Yes

L. Guo, Z. Wang, M. Adjouadi, (2016). *A Supervised Learning Rule for Classification of Spatiotemporal Spike Patterns*. 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society 2016 (IEEE EMBC'16). Orlando, FLorida. Status = ACCEPTED; Acknowledgement of Federal Support = Yes

L. Guo, Z. Wang, M. Cabrerizo, M. Adjouadi (2016). *Application of Cross-Correlated Delay Shift Rule in Spiking Neural Networks for Interictal Spike Detection*. 38th Annual International Conference of the EEE Engineering in Medicine and Biology Society 2016 (IEEE EMBC'16). Orlando, FLorida. Status = ACCEPTED; Acknowledgement of Federal Support = Yes

H. Rajaei, M. Cabrerizo, P. Janwattanapong, A. Pinzon-Ardila, S. Gonzalez-Arias, and M. Adjouadi (2016). *Connectivity Maps of different Types of Epileptic Patterns*. 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society 2016 (IEEE EMBC'16). Orlando FL. Status = PUBLISHED; Acknowledgement of Federal Support = Yes

D. Rojas, M. Jiménez, A. Santiago-Román (2017). *Integrating Modular Strategies into an Embedded System Design Laboratory: An Outcome-Based Educational Approach..* ASEE Zone2 Annual conference. San Juan, PR. Status = PUBLISHED; Acknowledgement of Federal Support = No

P. Khani, B. Tang, J. Han, M. Beheshti (2016). *Power-Efficient Virtual Machine Replication in Data Centers*. IEEE ICC 2016 SAC Cloud Communications and Networking. Kuala Lumpur, Malaysia. Status = ACCEPTED; Acknowledgement of Federal Support = Yes

Other Products

Other Publications

J. Perkins, D. Shastri (2016). *American Sign Language Translator Using Gesture Recognition*. 2nd Computer Science Undergraduate Research Expo at the University of Texas – Dallas. Status = PUBLISHED; Acknowledgement of Federal Support = Yes

J. Perkins, K. Brown, P. Ihenacho, J. Chisholm, D. Shastri, Y. Pinelis (2015). *An Interface Design for Automating Shale Strata Identification*. CAHSI summit, San Juan, Puerto Rico, September 10-11, 2015. Status = ACCEPTED; Acknowledgement of Federal Support = Yes

CAHSI students (2016). *HENAAC Conference 2016*. 30 Student papers submitted for presentation at the HENAAC Conference 2016 as part of the CAHSI Summit. The papers were reviewed by CAHSI faculty.. Status = OTHER; Acknowledgement of Federal Support = Yes

Patents

Technologies or Techniques

Thesis/Dissertations

Danilo Rojas. *A Modular Design Approach for Improving the Learning Process of Undergraduate Students in the Embedded System Design Laboratory*. (2016). The university of Puerto Rico, Mayaguez Campus. Acknowledgement of Federal Support = Yes

Jesus Torrado.. *A Navigation System for Free Descent-Ascent Autonomous Underwater Vehicles*. (2017). The University of Puerto Rico, Mayaguez Campus. Acknowledgement of Federal Support = Yes

Omar Ochoa. *Box-Fusion: A Way to Enhance the Pairwise Testing Approach*. (2016). The University of Texas at El Paso. Acknowledgement of Federal Support = Yes

Websites

CAHSI INCLUDES

<http://cahsi-includes.cs.utep.edu/>

The CAHSI INCLUDES website documents the efforts that are being done to create a networked community with CAHSI and other partners to expand participation of Hispanics in computing using a collective impact model.

Computing Alliance of Hispanic Serving Institutions

<http://cahsi.org>

The CAHSI website documents the resources and activities provided by CAHSI for faculty and students.

Participants/Organizations

Research Experience for Undergraduates (REU) funding

Form of REU funding support: REU supplement

How many REU applications were received during this reporting period?

How many REU applicants were selected and agreed to participate during this reporting period?

REU Comments:

What individuals have worked on the project?

Name	Most Senior Project Role	Nearest Person Month Worked
Gates, Ann	PD/PI	2
Adjouadi, Malek	Co PD/PI	1
Beheshti, Mohsen	Co PD/PI	1
Mahdy, Ahmed	Co PD/PI	1
Pontelli, Enrico	Co PD/PI	2
Rodriguez, Nestor	Co-Investigator	1
Santiago, Nayda	Co-Investigator	3
Shastri, Dvijesh	Co-Investigator	2
Amian, Chatterie	Faculty	1
Cao, Huiping	Faculty	1
Ceberio, Martine	Faculty	1
Fuentes, Olac	Faculty	1
Han, Jianchao	Faculty	1
Perera, Graciela	Faculty	1
Roy, Mary	Faculty	1
Salamah, Salamah	Faculty	1
Urenda, Julio	Faculty	1

Name	Most Senior Project Role	Nearest Person Month Worked
Valenzuela, Eliana	Faculty	1
Villanueva, Natalia	Faculty	1
Casas, Claudia	Other Professional	6
Diaz, Violeta	Other Professional	1
Esparza, Patricia	Other Professional	12
Galves, Rebecca	Other Professional	1
Martinez, Mayra	Other Professional	1
Teran Lopez, Christian	Other Professional	3
Thiry, Heather	Other Professional	3
Hug, Sarah	Consultant	2
Thiry, Heather	Consultant	2

Full details of individuals who have worked on the project:

Ann Q Gates

Email: agates@utep.edu

Most Senior Project Role: PD/PI

Nearest Person Month Worked: 2

Contribution to the Project: PI--set direction

Funding Support: NSF grant 1042341

International Collaboration: No

International Travel: No

Malek Adjouadi

Email: adjouadi@fiu.edu

Most Senior Project Role: Co PD/PI

Nearest Person Month Worked: 1

Contribution to the Project: Organize and help recruit students for the CS0 Class which is offered every summer at FIU. Help students who apply for fellowships to NSF and other federal agencies. Help with outreach activities through our engineer and computing fair and other student activities. Introduce undergraduate and high school students to the merits of research through visits to our research centers.

Funding Support: NSF

International Collaboration: No

International Travel: No

Mohsen Beheshti

Email: mbeheshti@csudh.edu

Most Senior Project Role: Co PD/PI

Nearest Person Month Worked: 1

Contribution to the Project: Mohsen Beheshti (CSUDH) coordinates the activities and initiatives of CAHSI at CSUDH, the budget at CSUDH, and coordinates activities at CSUDH.

Funding Support: He receives support from BPC funds.

International Collaboration: No

International Travel: No

Ahmed M Mahdy

Email: ahmed.mahdy@tamucc.edu

Most Senior Project Role: Co PD/PI

Nearest Person Month Worked: 1

Contribution to the Project: Senior Personnel; oversees the activities at TAMU-CC.

Funding Support: BPC

International Collaboration: No

International Travel: No

Enrico Pontelli

Email: epontell@cs.nmsu.edu

Most Senior Project Role: Co PD/PI

Nearest Person Month Worked: 2

Contribution to the Project: Dr. Pontelli coordinates the CAHSI activities at NMSU. He also participates in the leadership activities of the alliance. He primarily leads the K-12 aspects of the current CAHSI efforts.

Funding Support: BPC

International Collaboration: No

International Travel: No

Nestor Rodriguez

Email: nestor@ece.uprm.edu

Most Senior Project Role: Co-Investigator

Nearest Person Month Worked: 1

Contribution to the Project: CAHSI Co-Investigator at UPRM

Funding Support: Receives support from BPC funds

International Collaboration: No

International Travel: No

Nayda Santiago

Email: nayda.santiago@ece.uprm.edu

Most Senior Project Role: Co-Investigator

Nearest Person Month Worked: 3

Contribution to the Project: Nayda Santiago (UPRM) co-leads the undergraduate research effort.

Funding Support: She receives support from BPC (CNS-1042341)

International Collaboration: No

International Travel: No

Dvijesh Shastri

Email: shastrid@uhd.edu

Most Senior Project Role: Co-Investigator

Nearest Person Month Worked: 2

Contribution to the Project: Dvijesh Shastri coordinated CAHSI activities at UHD. Specifically, he coordinated CAHSI REU program, and mentored 3 undergraduate students who participated in the program. Dvijesh was involved in the PLTL activities. He institutionalized career preparedness workshops in the senior seminar course (CS 4294). He initiated an attempt to create a CS0 course at UHD and successfully accomplished it. The course is now part of the undergraduate CS curriculum and the undergraduate Data Science curriculum. Dvijesh was involved in the HENAAC conference, bringing 18 UHD students to the conference, out of which 13 students presented their research findings. Dvijesh was involved in K-12 outreach activities.

Funding Support: Receives support from BPC funds

International Collaboration: No

International Travel: No

Chatterie Amian

Email: a chatterjee@csudh.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Amlan Chatterjee coordinates REU and CAHSI Club activities at CSUDH.

Funding Support: University

International Collaboration: No

International Travel: No

Huiping Cao

Email: hcao1@nmsu.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Huiping Cao (NMSU) supports CAHSI efforts at NMSU.

Funding Support: University

International Collaboration: No

International Travel: No

Martine Ceberio

Email: mceberio@utep.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Martine Ceberio participated in peer leading courses at UTEP

Funding Support: University

International Collaboration: No

International Travel: No

Olac Fuentes

Email: ofuentes@utep.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Olac Fuentes participated in peer leading courses at UTEP

Funding Support: University

International Collaboration: No

International Travel: No

Jianchao Han

Email: jhan@csudh.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Jack Han coordinates the PLTL activities at CSUDH.

Funding Support: He receives support from BPC funds (CNS-1042341)

International Collaboration: No

International Travel: No

Graciela Perera

Email: gcpererao77@gmail.com

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Graciela Perera (NEIU) represents a CAHSI adopting institution.

Funding Support: Dr. Perera's travel has been funded by BPC funds (CNS-1042341)

International Collaboration: No
International Travel: No

Mary K. Roy

Email: mkroy@utep.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Mary Kay Roy participated in CS0 courses at UTEP.

Funding Support: University

International Collaboration: No

International Travel: No

Salamah Salamah

Email: isalamah@utep.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Dr. Salamah supported the CAHSI Summit

Funding Support: University

International Collaboration: No

International Travel: No

Julio Urenda

Email: jcurenda@utep.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Dr. Urenda participates in PLTL courses at UTEP.

Funding Support: Dr. Urenda received travel support from BPC funds.

International Collaboration: No

International Travel: No

Eliana Valenzuela

Email: eliana.valenzuela@upr.edu

Most Senior Project Role: Faculty

Nearest Person Month Worked: 1

Contribution to the Project: Dr. Valenzuela support CAHSI as an adopter

Funding Support: University.

International Collaboration: No

International Travel: No

Natalia Villanueva**Email:** nvillanuevarosales@utep.edu**Most Senior Project Role:** Faculty**Nearest Person Month Worked:** 1

Contribution to the Project: Natalia Villanueva supervised REU projects at UTEP and support PLTL courses.

Funding Support: University**International Collaboration:** No**International Travel:** No**Claudia V Casas****Email:** ccasas@utep.edu**Most Senior Project Role:** Other Professional**Nearest Person Month Worked:** 6

Contribution to the Project: Claudia supported PLTL courses for Fall 2016 and Spring 2017 semesters. She also assisted with the HENAAC conference.

Funding Support: NSF**International Collaboration:** No**International Travel:** No**Violeta Diaz****Email:** vdiaz@csudh.edu**Most Senior Project Role:** Other Professional**Nearest Person Month Worked:** 1

Contribution to the Project: Ms. Diaz coordinates faculty/Student travel and paper work.

Funding Support: BPC Funds**International Collaboration:** No**International Travel:** No**Patricia Esparza****Email:** pesparza3@utep.edu**Most Senior Project Role:** Other Professional**Nearest Person Month Worked:** 12

Contribution to the Project: Patricia Esparza coordinated the HENAAC conference and the CAHSI Summit 2017. She also managed activities for CAHSI during the year.

Funding Support: BPC**International Collaboration:** No**International Travel:** No

Rebecca Galves

Email: rgalves@cs.nmsu.edu

Most Senior Project Role: Other Professional

Nearest Person Month Worked: 1

Contribution to the Project: Rebecca Galves is the program coordinator for Young Women in Computing (YWiC). She aid in the management of the CAHSI activities with the department and coordinates with the schools and organizations targeted.

Funding Support: NSF

International Collaboration: No

International Travel: No

Mayra Martinez

Email: Mayra.Martinez@tamucc.edu

Most Senior Project Role: Other Professional

Nearest Person Month Worked: 1

Contribution to the Project: Coordinator at TAMUCC

Funding Support: BPC funds used

International Collaboration: No

International Travel: No

Christian Teran Lopez

Email: cteranlopez@miners.utep.edu

Most Senior Project Role: Other Professional

Nearest Person Month Worked: 3

Contribution to the Project: Christian Teran coordinates the accounting of the grant

Funding Support: She receives support from BPC (CNS-1042341)

International Collaboration: No

International Travel: No

Heather Thiry

Email: Heather.Thiry@Colorado.edu

Most Senior Project Role: Other Professional

Nearest Person Month Worked: 3

Contribution to the Project: Evaluator - Consultant

Funding Support: BPC funds used

International Collaboration: No

International Travel: No

Sarah Hug**Email:** hug@colorado.edu**Most Senior Project Role:** Consultant**Nearest Person Month Worked:** 2**Contribution to the Project:** Sarah Hug is one of two CAHSI evaluators for the grant.**Funding Support:** She receives support from BPC funds (CNS-1042341)**International Collaboration:** No**International Travel:** No**Heather Thiry****Email:** heather.smith@Colorado.EDU**Most Senior Project Role:** Consultant**Nearest Person Month Worked:** 2**Contribution to the Project:** Heather Thiry is one of two CAHSI evaluators for the grant.**Funding Support:** She receives support from BPC funds (CNS-1042341).**International Collaboration:** No**International Travel:** No**What other organizations have been involved as partners?**

Name	Type of Partner Organization	Location
A4RC— Alliance for the Advancement of African-American	Other Organizations (foreign or domestic)	Indiana University
American Association of University Women (AAUW)	Other Nonprofits	Washington, D.C.
Golden Evaluation and Policy Research	Industrial or Commercial Firms	Golden, CO
Google	Industrial or Commercial Firms	Mountain View, CA
Great Minds in STEM	Other Nonprofits	California
Hispanic Scholarship Fund Institute	Other Nonprofits	Gardena, CA
Latinas in Computing (LiC)	Other Nonprofits	Palo Alto, CA
Microsoft	Industrial or Commercial Firms	Redmond, WA
NCWIT	Other Nonprofits	Boulder, CO
New Mexico Supercomputing Challenge	Other Nonprofits	Los Alamos, NM

Name	Type of Partner Organization	Location
SACNAS	Other Nonprofits	Santa Cruz, CA
Society for Professional Hispanic Engineers (SHPE)	Other Nonprofits	Los Angeles, CA
Anita Borg Institute for Women and Technology	Other Nonprofits	Palo Alto, CA
Team for Research in Ubiquitous Secure Technology (TRUST)	Other Organizations (foreign or domestic)	Berkeley, CA
Texas State University	State or Local Government	San Marcos, TX
The GEM Consortium	Other Nonprofits	Alexandria, VA
The IBM Academic Initiative (AI) program	Industrial or Commercial Firms	Armonk, NY
Young Women In Computing	Other Nonprofits	Las Cruces, NM
CMD-IT	Other Nonprofits	Texas A&M University
CRA Coalition to Diversify Computing (CDC)	Other Nonprofits	Washington, D.C.
CS Ed Week	Other Nonprofits	Washington, D.C.
Computer Science Collaborative Project (CSCP)	Other Nonprofits	Lynnwood, WA
Computing Research Association Education (CRA-E)	Other Nonprofits	Washington, D.C.
CyberWatch West	Other Nonprofits	Walnut, California
Excelencia in Education	Other Nonprofits	Washington, D.C.

Full details of organizations that have been involved as partners:

A4RC— Alliance for the Advancement of African-American

Organization Type: Other Organizations (foreign or domestic)

Organization Location: Indiana University

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: A4RC collaborated with CAHSI to disseminate the Affinity Research Group model. CAHSI has shared the FellowNet process documentation with Jeffrey Forbes from NSF, Juan Gilberr, Yolanda Rankin, Quincy Brown, and Jakita Thomas in order to disseminate the initiative through a similar project. A4RC has transition into a new Alliance focused on African American researchers).

American Association of University Women (AAUW)

Organization Type: Other Nonprofits

Organization Location: Washington, D.C.

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution:

Anita Borg Institute for Women and Technology

Organization Type: Other Nonprofits

Organization Location: Palo Alto, CA

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Nayda Santiago at UPRM the Grace Hopper Regional Conference in Puerto Rico in February 2014. This is part of the CAHSI Femprof initiative. Dr. Ann Gates, CAHSI PI, and Patricia Lopez, CAHSI Board of Advisors Member were featured as part of Anita's Quilt – Threads of Inspiration website (<http://anitasquilt.org/welcome/>) as part of a campaign to motivate and empower through stories from other women. CAHSI works on disseminating effective practices for retention of females in computing.

CMD-IT

Organization Type: Other Nonprofits

Organization Location: Texas A&M University

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: CAHSI co-sponsors the Academic Workshops for Underrepresented Participants with CDC, CMD-IT, and AccessComputing. CAHSI actively recruits Hispanics to attend the workshop.

CRA Coalition to Diversify Computing (CDC)

Organization Type: Other Nonprofits

Organization Location: Washington, D.C.

Partner's Contribution to the Project:

Facilities

Collaborative Research

More Detail on Partner and Contribution: CAHSI participates in Data Buddies, an effort in nationwide data gathering . CRA-W and CDC Alliance are gathering data for students from mid-undergraduate through finishing PhD students, post doctorates, and faculty.

CS Ed Week

Organization Type: Other Nonprofits

Organization Location: Washington, D.C.

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: CAHSI promotes CS ED Week to promote computing.

Computer Science Collaborative Project (CSCP)

Organization Type: Other Nonprofits

Organization Location: Lynnwood, WA

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Computer Science Collaborative Project (CSCP) is run by Karen Peterson of EdLabGroup in Washington State and funded by the National Science Foundation as part of its Broadening Participation in Computing Program. The goal of CSCP is to increase diversity in computing by building collaborations across K-12, community-based organizations, higher education, and industry. CAHSI collaborates on sharing resources for K-12 outreach and is part of the Engaging Hispanic/Latino (a) Youth Collaboration Leadership Team. CAHSI had discussions with CSCP about collaborating in the proposal writing for an I3 RFP for the Department of Education. CAHSI serves in an advisory position for the Computing Science Collaboration project with the purpose of engaging K-12 Hispanic youth in Computer Science.

Computing Research Association Education (CRA-E)

Organization Type: Other Nonprofits

Organization Location: Washington, D.C.

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: CAHSI personnel assist in the activities of CRA-E

CyberWatch West

Organization Type: Other Nonprofits

Organization Location: Walnut, California

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Dr. Mohsen Beheshti from California State University – Dominguez Hills, Texas A&M – Corpus Christi, and UTEP are members CyberWatch West as part of CAHSI's dissemination and collaboration efforts in the area of cyber-security. The main mission of CyberWatch West is to improve the quantity and quality of the cyber-security/information assurance workforce. Similarly to CAHSI, the consortium shares best practices, methodologies, curricula, course modules, and materials to support schools seeking to develop further in the area of cyber-security.

Excelencia in Education

Organization Type: Other Nonprofits

Organization Location: Washington, D.C.

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Ann Gates, as a representative for CAHSI, is an affiliate of the Action Agenda with Excelencia in Education that is a select group of people working to address increased college completion rates of Hispanics.

Golden Evaluation and Policy Research

Organization Type: Industrial or Commercial Firms

Organization Location: Golden, CO

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Heather Thiry and Sara Hug previously part of University of Colorado-Boulder, and now independently contracted through Golden Evaluation and Policy Research work on the evaluation of the project.

Google

Organization Type: Industrial or Commercial Firms

Organization Location: Mountain View, CA

Partner's Contribution to the Project:

In-Kind Support

Facilities

Collaborative Research

More Detail on Partner and Contribution: CAHSI has teamed up with Google in a number of activities. Currently, Google is working with CAHSI on curriculum development. They have reserved opportunities for CAHSI students.

Great Minds in STEM

Organization Type: Other Nonprofits

Organization Location: California

Partner's Contribution to the Project:

In-Kind Support

Facilities

More Detail on Partner and Contribution: CAHSI joined forces with Great Minds in STEM by holding the CAHSI annual summit in a joint event with the HENAAC Conference 2016. CAHSI's collaboration is focused on supporting the recruitment, retention, and advancement of Hispanics in computing by strengthening CAHSI's student and professional networks through our annual networking lunch, hackathon, and technical and professional development sessions.

Hispanic Scholarship Fund Institute

Organization Type: Other Nonprofits

Organization Location: Gardena, CA

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Hispanic Scholarship Fund (HSF) HSF is the nation's leading Hispanic scholarship organization, providing the Hispanic and other underserved communities more college scholarships and educational outreach support than any other organization in the country. HSF will serve as a liaison between potential industry partners and CAHSI. HSF and CAHSI collaborate to develop programs for joint solicitation of sponsorships and new scholarship programs. HSF has provided CAHSI with bilingual pamphlets promoting computing careers for outreach efforts.

Latinas in Computing (LiC)

Organization Type: Other Nonprofits

Organization Location: Palo Alto, CA

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Latinas in Computing (LiC) LiC is comprised of Latinas from the industry, government labs and the Academia. Their goal is to define key strategies to promote leadership and professional development among current and next generation of Latinas. Latinas in Computing works with CAHSI in preparing developmental workshops and panels.

Microsoft

Organization Type: Industrial or Commercial Firms

Organization Location: Redmond, WA

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Microsoft provided a Windows 8 development workshop in coordination with CAHSI to support the Microsoft App Madness Challenge Event. Bradley Jensen, Principal Academic Relationship Manager at Microsoft is part of the Board of advisors for CAHSI.

NCWIT

Organization Type: Other Nonprofits

Organization Location: Boulder, CO

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: NCWIT: National Center for Women in Information Technology NCWIT published three Promising Practices handouts that include CAHSI initiatives. CAHSI is adopting practices to increase the number of Hispanic women in computing. CAHSI has collaborated with NCWIT in

developing and reviewing content for the development of the REU-in-a-box online resource which is now available through the NCWIT website (<http://www.ncwit.org/reubox>). Ann Gates contributed to the development of the REU-in-a-Box project to incorporate the Affinity Research Group model. CAHSI faculty are active on NCWIT committees and activities, e.g., Aspirations in Computing.

New Mexico Supercomputing Challenge

Organization Type: Other Nonprofits

Organization Location: Los Alamos, NM

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution:

SACNAS

Organization Type: Other Nonprofits

Organization Location: Santa Cruz, CA

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Society for Advancing Hispanics, Chicanos, and Native Americans in Science (SACNAS): This society is dedicated to fostering the success of Hispanic/Chicano and Native American scientists, from college students to professionals in attaining advanced degrees, careers, and positions of leadership. With a focus of expanding to include computing and engineering, SACNAS's Executive Board has approved a partnership with CAHSI to collaborate on the conference and leadership institute. Our organizations both value preparing and advancing students in research careers.

Society for Professional Hispanic Engineers (SHPE)

Organization Type: Other Nonprofits

Organization Location: Los Angeles, CA

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Societies for Professional Hispanic Engineers (SHPE) and CAHSI have collaborated on student development workshops.

Team for Research in Ubiquitous Secure Technology (TRUST)

Organization Type: Other Organizations (foreign or domestic)

Organization Location: Berkeley, CA

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: Berkeley has been working with CAHSI in recruiting students to attend development workshops and participate in research experiences in the TRUST program. CAHSI has

entered into an MOU with TRUST and is promoted on the TRUST website (<https://tao.truststc.org/Members/whrobinson/cahsi/?searchterm=CAHSI>).

Texas State University

Organization Type: State or Local Government

Organization Location: San Marcos, TX

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: CAHSI has been working with Texas State University to finalize an MOU. This new collaboration would be focused on promoting CAHSI best practices at Texas State.

The GEM Consortium

Organization Type: Other Nonprofits

Organization Location: Alexandria, VA

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: GEM Consortium and CAHSI have partnered in GEM workshops, in particular in the preparation of competitive fellowship application sections such as a Statement of Purpose. CAHSI is using these materials for its MentorGrad effort. CAHSI has representation on the scholarship review panel. GEM provided meeting space for the 2014 CAHSI BOA meeting.

The IBM Academic Initiative (AI) program

Organization Type: Industrial or Commercial Firms

Organization Location: Armonk, NY

Partner's Contribution to the Project:

In-Kind Support

Collaborative Research

More Detail on Partner and Contribution: The IBM Academic Initiative (AI) program provides CAHSI institutions with access to software, hardware, workshops, training, tools, books, and discounts with the goal of improving student preparation for information technology and jobs in computing.

Young Women In Computing

Organization Type: Other Nonprofits

Organization Location: Las Cruces, NM

Partner's Contribution to the Project:

Collaborative Research

More Detail on Partner and Contribution: New Mexico State University works with `Young Women in Computing in outreach activities directed to attract middle school students into the Computing fields.

What other collaborators or contacts have been involved?

Smithsonian Latino Center

Impacts

What is the impact on the development of the principal discipline(s) of the project?

This year, the project focused on building collaboration across CAHSI on cybersecurity research and education. The intent is to build strong cybersecurity curriculum and co-curricular activities across CAHSI.

As noted in other reports, since its inception in 2006, CAHSI's graduation rates have consistently surpassed national trends, when comparing CAHSI against other longstanding departments that have existed since 2002. Nationally, in 2015, this comparison set of departments graduated 70% of the number that they graduated in 2002, while CAHSI graduated 105% of its 2002 total. Most CAHSI departments increased their BS graduation rates in 2014-15.

What is the impact on other disciplines?

The practices of CAHSI are transferrable to other disciplines. There are numerous examples of how CAHSI practices have been adopted in other STEM departments at CSU-DH, UTEP, NMSU, UPRM, UHD, NEIU, UC Merced and other institutions.

What is the impact on the development of human resources?

The project is directly contributing to the development of human resources at many different levels. For example, NMSU actively involves graduate students and undergraduate students in activities that include professional development of K12 teachers and engagement of high school students in computer science. Each member of the team is trained not only in computational methods and tools, but also in pedagogy. NMSU collaborator, Dr. Susan Brown (College of Education), provides continual training in project-based teaching, inquiry-based learning, and pedagogical instruments that are age and background relevant. The training promotes the development of teamwork skills. The project also emphasizes the development of leadership skills – different members of the research team are asked to lead specific activities, thus promoting communication, decision making, and positive interpersonal interaction. The project's primary goal is to develop the computational thinking skills of middle and high school students. Other CAHSI institutions focus on professional development through the ARG and PLTL models.

What is the impact on physical resources that form infrastructure?

Nothing new to report (from 2015-2016).

What is the impact on institutional resources that form infrastructure?

Assessment of CAHSI's organizational capacity has illustrated CAHSI's progress towards creating change in computing education for Hispanics within its membership. The rubric measures organizational capacity via a healthy pipeline of interested and qualified students, resource development and training, faculty/staff engagement, and financial sustainability. CAHSI's sustainability depends on the development of capacity to support activities as well as Alliance level abilities to continue and advance the organizations' goals. CAHSI institutions have institutionalized many of the practices, which is leading to sustainability of CAHSI efforts.

What is the impact on information resources that form infrastructure?

CAHSI has created materials and handbooks that support the adoption of practices at other universities. Materials are available through the website. CAHSI is in the process of creating problem-solving curriculum for 1-credit hour courses in coordination with Google. These courses will be disseminated across CAAHSI and beyond.

As described last year, the NMSU team has coordinated a team of teachers, across the state, leading to the establishment of the Computer Science Teachers Association of New Mexico (CSTANM, <https://sites.google.com/a/cstahq.org/newmexico/>).

What is the impact on technology transfer?

Nothing to report.

What is the impact on society beyond science and technology?

The efforts of CAHSI place a spotlight on the low number of Hispanics who seek degrees in higher education. The outreach to middle and high schools provides pathways to students to attend college. Furthermore, the practices are applicable to the transition from community colleges to baccalaureate programs and from baccalaureate programs (regardless of where one starts) to graduate programs regardless of major. CAHSI practices have been adopted by faculty outside of STEM, in particular in colleges of Liberal Arts, Nursing, and Business.

Changes/Problems

Changes in approach and reason for change

Nothing to report.

Actual or Anticipated problems or delays and actions or plans to resolve them

Nothing to report.

Changes that have a significant impact on expenditures

Nothing to report.

Significant changes in use or care of human subjects

Nothing to report.

Significant changes in use or care of vertebrate animals

Nothing to report.

Significant changes in use or care of biohazards

Nothing to report.

Special Requirements

Responses to any special reporting requirements specified in the award terms and conditions, as well as any award specific reporting requirements.

Nothing to report.