



The Hispanic Alliance for the Graduate Education and the Professoriate

A Model to Increase Latino Representation in College STEM Faculty

14th Annual AHSIE Best Practice Conference

March 29th, 2021

NSF AGEP Awards:

HRD - 1723209 **City College of New York (CCNY)**

Website: <https://eses.cuny.cuny.edu>

HRD - 1723245 **University of Texas El Paso (UTEP)**



The City College
of New York

Presentation Outline

- ✓ H-AGEP Rationale
- ✓ H-AGEP Goal and Objectives
- ✓ Fellow Selection, Recruitment and Onboarding Process
- ✓ H-AGEP Model
- ✓ H-AGEP Fellow Mentorship Program
- ✓ Training in Effective Teaching in STEM Disciplines
- ✓ Undergraduate Mentoring
- ✓ Integrated Fellow Training, Career Advancement, and Transition to the Professoriate
- ✓ Professional Development Workshops



H-AGEP RATIONALE

- ✓ Hispanic and URM faculty representation on campus had a positive impact on URM student success when measured in grades and course completions.
- ✓ Hispanics comprised only 5% of all full-time faculty in degree-granting postsecondary institutions. The percentage is even lower in STEM areas (NCES 2017).
- ✓ 52% of Hispanic undergraduates attend community college (CC). However, only one in ten Hispanic students who start at a CC completed a degree at a four-year institution.

The low percentage of Hispanics in STEM faculty positions is primarily driven by their low representation in graduate programs



Need to increase the number of Hispanic and URM faculty

H-AGEP GOAL AND OBJECTIVES

GOAL

Develop, implement and study a model for training and transitioning Hispanic STEM doctoral students as they transition to STEM instructional faculty or staff positions at community colleges (CC) or other associate degree granting institutions.

OBJECTIVES

Develop a strong mentorship and networking program

Develop Fellows' skills in technology-based teaching and in cutting-edge interdisciplinary research

Build Fellows' soft-skills and provide mentoring training

Enhance Fellows' skills to become effective academic, professional, and research mentors

Contribute to the knowledge base and literature on the career decision-making and success of Fellows

Fellow Selection, Recruitment and Onboarding Process

Fellow Qualifications

- ✓ Enrolled in PhD program (Level 2 or above)
- ✓ GPA 3.0 or above
- ✓ Conducting research in environmental science and engineering related areas
- ✓ Interested or considering pursuing an academic career after completing doctoral degree

Fellow Selection

- ✓ H-AGEP leadership reviews the applications
- ✓ Meeting/interview the Fellows
- ✓ H-AGEP leadership meets to select the Fellows

Onboarding of Fellows and Advisors

- ✓ One on one meetings with fellows to discuss activities for the year and timeline. Fellows signed the MOU.
- ✓ Meeting with each fellow + advisor to coordinate specific Fellow individual plans. The H-AGEP Individual Development Plan will be used to guide this conversation. Fellows' involvement in the program will be informed by research and academic activities.
- ✓ All-hands meeting

Recruitment Challenges

Initially, both institutions used formal methods for recruiting potential candidates, namely contacting STEM department chairs, and sending emails to Hispanic doctoral students in those programs. However, there was a lack of response from the students, particularly at CCNY. Each institution used a combination of methods for recruitment, some which were more fruitful than others.

UTEP

- ✓ Another strategy that has been helpful for UTEP, was referrals from previous Fellows to their peers on campus.

CCNY

- ✓ Recruitment is done by contacting individual STEM faculty to ask them for referrals of Hispanic students in their departments to approach for recruitment. Faculty advisors are informed about the program and acted as recruiters. They pass the information to their PhD students. This method was successful.

H-AGEP Fellows

COHORT 1



Adrian Diaz, CCNY



Natalia Quintero, CCNY



David Melecio-Vazquez,
CCNY



Joanne Moyer, UTEP



Anna Pina, UTEP



Eric Galvan, UTEP

COHORT 2



Joan Gomez, CCNY



Alana Menendez,
CCNY



Eder Herrera, CCNY



Victor Garcia, UTEP



Jane Martinez, UTEP



Katalina Salas, UTEP



Ashley Payan, UTEP

COHORT 3



Rose Jimenez, CCNY



Jorge Guerrero, CCNY



Kathleen Schaeffer,
UTEP



Olga Soto, UTEP



Maribel Baeza, UTEP



Juan Fernandez, UTEP

COHORT 4



Richard Monge, CCNY



Laura Rivas, CCNY



Enrique Garcia, UTEP



Angel Armenta, UTEP

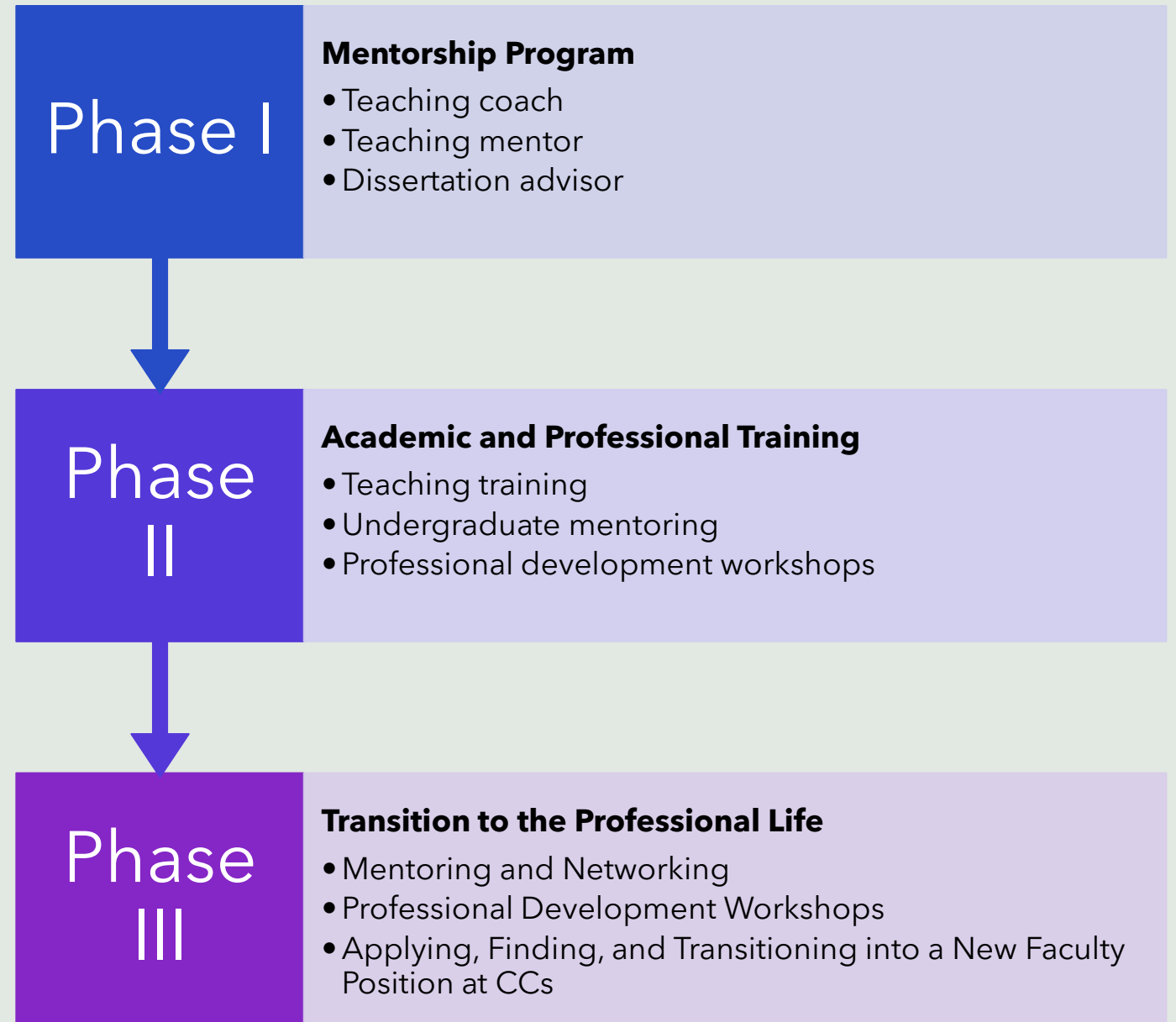


Jose Hernandez, UTEP

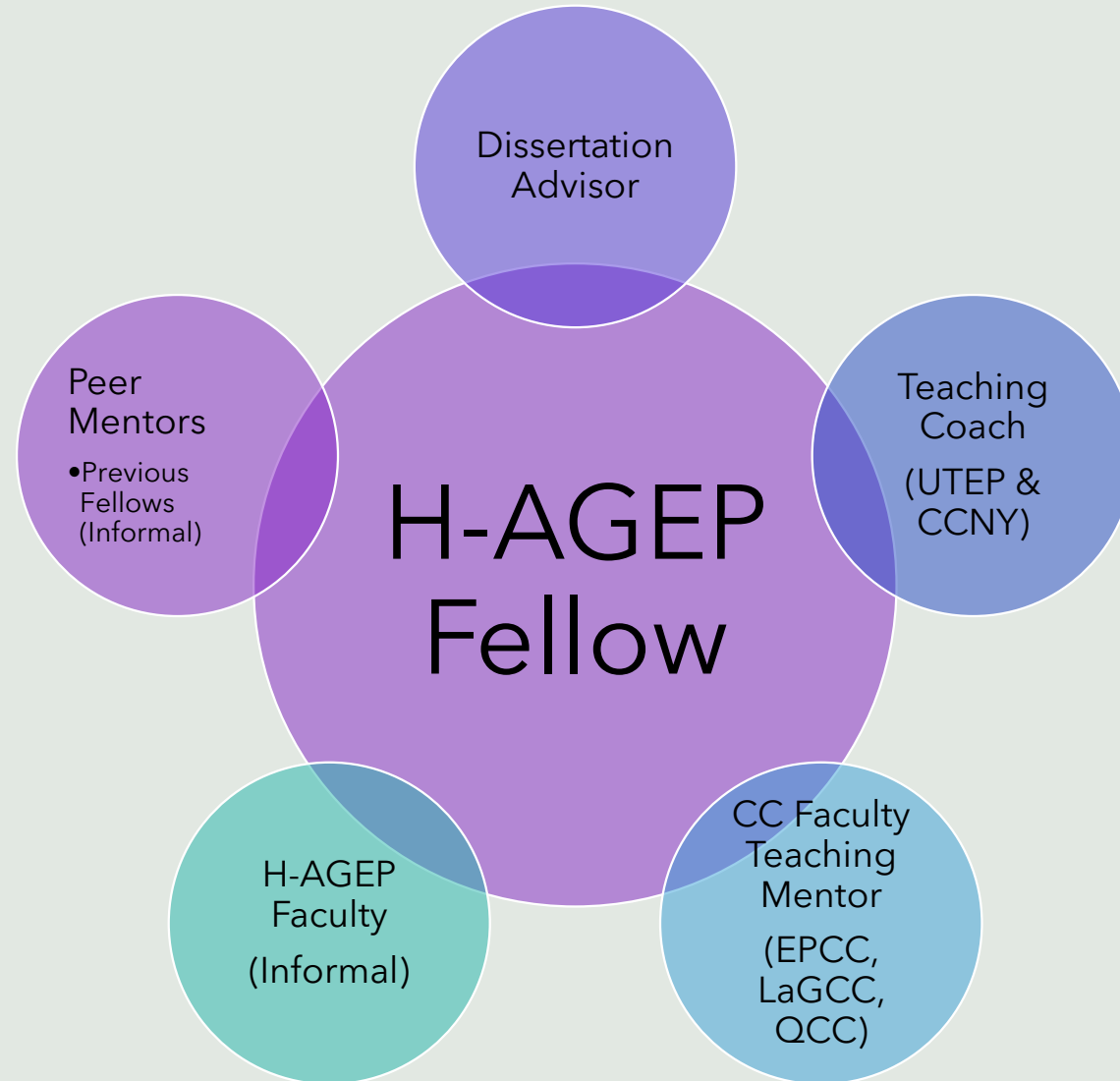


Nora Cuvelier, UTEP

H-AGEP MODEL



H-AGEP Fellow Mentorship Program



H-AGEP Fellows

Cohort	Name	Institution	Ethnicity	Major	Disertating Advisor	Teching Coach	Teaching Mentor
1	Natalia Quinteros	CCNY	Hispanic	Biology	Dr. Douglas C. Daly	Prof. Richard Steinberg	Dr. Yasser Hassebo
1	Adrian Diaz Fortich	CCNY	Hispanic	Electrical Engineering	Dr. Fred Moshary	Prof. Richard Steinberg	Dr. Yasser Hassebo
1	David Melecio-Vazquez	CCNY	Hispanic	Mechanical Engineering	Dr. Jorge E. Gonzalez	Prof. Richard Steinberg	Dr. Dugwon Seo
1	Joanne Moyer	UTEP	Hispanic	Civil Engineering	Dr. Adeeba Raheem	Prof. Harry Meeuwsen	Prof. Mariano Olmos
1	Anna Piña	UTEP	Hispanic	Ecology & Evolutionary Biology	Dr. Vanessa Lougheed	Prof. Harry Meeuwsen	Dr. Jeffrey Sivils
1	Eric Galvan	UTEP	Hispanic	Electrical and Computer Engineering	Dr. Paras Mandal	Prof. Harry Meeuwsen	Dr. Steven Marek
2	Jane K Martinez	UTEP	Hispanic	Ecology and Evolutionary Biology	Dr. Anthony Darrouzet-Nardi	Prof. Harry Meeuwsen	Dr. Jeffrey Sivils
2	Ashley N Payan	UTEP	Hispanic	Biological Sciences	Dr. Marc B. Cox	Prof. Harry Meeuwsen	Dr. Jeffrey Sivils
2	Katalina Salas	UTEP	Hispanic	Environmental Science and Engineering	Dr. Deana Pennington	Prof. Harry Meeuwsen	Dr. Jose Pacheco
2	Victor M Garcia	UTEP	Hispanic	Civil Engineering	Dr. Soheil Nazarian	Prof. Harry Meeuwsen	Prof. Mariano Olmos
2	Joan Gomez	CCNY	Hispanic	Mechanical Engineering	Dr. Yiannis Andreopoulos	Prof. Richard Steinberg	Drs, Yasser Hassebo and Dugwon Seo
2	Alana Menendez	CCNY	Hispanic	Earth and environmental sciences	Dr. Maria Tzortziou	Prof. Richard Steinberg	Drs, Yasser Hassebo and Dugwon Seo
3	Eder Herrera	CCNY	Hispanic	Earth and environmental sciences	Dr. Alex Gilerson	Prof. Richard Steinberg	Dr. Dugwon Seo
3	Jorge Guerrero	CCNY	Hispanic	Electrical Engineering	Dr. Nicholas Madamopoulos Dr. Dwight Richards	Prof. Yasser Hassebo	Prof. Yasser Hassebo
3	Rose Jimenez	CCNY	Hispanic	Earth & Environmental Sciences	Dr. Juliana Mantaay	Prof. Yasser Hassebo	TBD - Fall 2021
3	Kathleen Schaeffer	UTEP	Hispanic	Ecology & Evolutionary Biology	Dr. Jennie McLaren	Prof. Ivonne Santiago Prof. Steve Varela	Prof. Jose Pacheco
3	Olga Soto	UTEP	Hispanic	Biological Sciences	Dr. Marc B. Cox	Prof. Ivonne Santiago Prof. Steve Varela	Prof. Jeffrey Sivils
3	Maribel Baeza	UTEP	Hispanic	Ecology & Evolutionary Biology	Dr. Elizabeth Walsh	Prof. Ivonne Santiago Prof. Steve Varela	Prof. Jose Pacheco
3	Juan Fernandez	UTEP	Hispanic	Environmental Science and Engineering	Dr. Heidi Taboada	Prof. Ivonne Santiago Prof. Steve Varela	Prof. Jesusita Ibarra
4	Enrique Garcia	UTEP	Hispanic	Ecology & Evolutionary Biology	Dr. Vanessa Lougheed	Prof. Ivonne Santiago	Prof. Jose Pacheco
4	Angel Armenta	UTEP	Hispanic	Social Psychology	Dr. Michael Zarate	Prof. Ivonne Santiago	TBD
4	Jose Hernandez	UTEP	Hispanic	Biological Sciences	Dr. Manuel Llano	Prof. Ivonne Santiago	Prof. Jeffrey Sivils
4	Nora Cuvelier	UTEP	Hispanic	Environmental Science and Engineering	Dr. Peter Golding	Prof. Ivonne Santiago	Prof. Jesusita Ibarra
4	Richard Monge	CCNY	Hispanic	Physics	Dr. Carlos Meriles	Prof. Yasser Hassebo	TBD
4	Laura Rivas	CCNY	Hispanic	Earth and Environmental Science	Dr. Monica Varsanyi	Prof. Yasser Hassebo	TBD

Training in Effective Teaching in STEM Disciplines

Two components occur **concurrently** in spring semester: teaching training and practicum at the Community College

Teaching Training

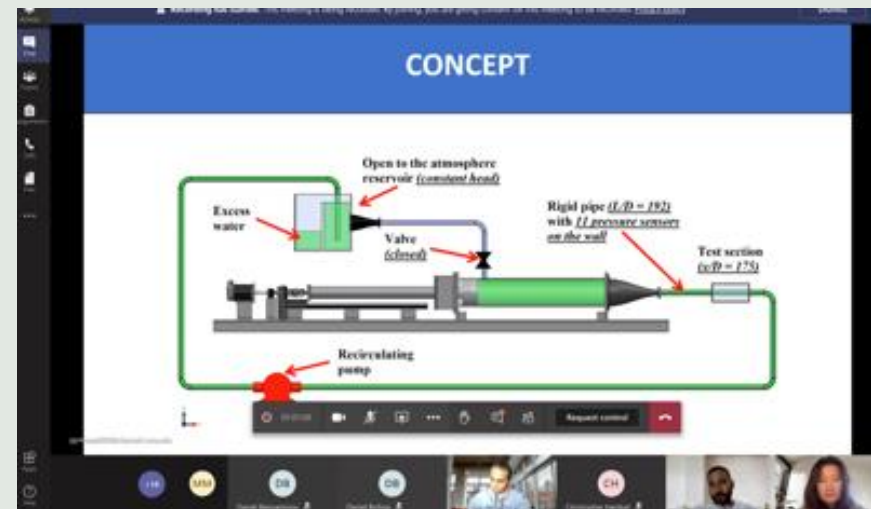
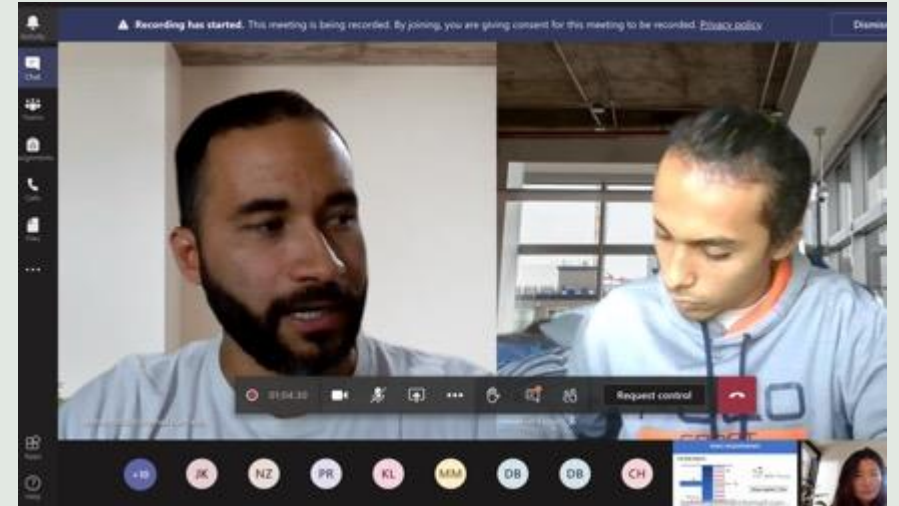
- ✓ Teaching Coaches meet with Fellows bi-weekly to review 7 Modules related to undergraduate STEM teaching and learning (CIRTL)
- ✓ Fellows review the application of the modules and how this informs their teaching styles and interactions with students
- ✓ By end of semester, Fellows will create STEM course syllabi, lesson plans, teaching philosophy, research, and diversity statements



Training in Effective Teaching in STEM Disciplines

Practicum at the Community College

- ✓ Fellows are partnered with a CC Mentor from a similar academic background
- ✓ Fellows lead instruction in the CC classroom on at least two occasions
- ✓ Fellows get continued mentoring/guidance from their CC mentors on how to present material, engage and mentor CC students
- ✓ Teaching Coaches to engage with CC Mentors to review the 7 Modules and reinforce Fellow's learning of teaching pedagogy



Fellows Teaching Practicum in EPCC (Spring 2021)

Teaching Mentors: Dr. Jeff Sivils, Dr. Jose Pacheco , & Prof. Jesusita Ibarra

Fellows	Prep meeting	Practicum date	Course	Topic
Olga Soto	3/6, 3/19, 4/25	3/8. 3/24, 4/29 Bb Collaborate	Anatomy and Physiology II	Selected topics Digestion, Nutrition, Reproduction.
Kathleen Schaeffer	2/1 2/9 3/1	2/25 and 4/30 Bb Collaborate	Introductory Biology II for Major's (Organismal Biology)	Tiny Heroes: The Role of Soil Bacteria in Ecosystems. Landscape Ecology in the Southwest
Juan Fernandez	1/11 2/2 2/22 2/26	Online (Asynchronous Class),2/26,3/1 presentation 3/11	Engineering Mechanics Statics	Uploaded video lectures on Force vectors, force systems resultants. Video presentation by fellow to EPCC students and Staff on his educational background and struggles in his educational journey



Dr. Sivils's fellow joined and observed weekly classes throughout the term. Dr. Pacheco and Prof. Ibarra's lectures were recorded.



Prep meetings were held prior to each fellow presentation to review the material and discuss delivery, either live or recorded.



The teaching practicum was observed if live or reviewed if recorded



Feed back was provided on the practicums/lectures.

Fellows Teaching Practicum in QCC (Spring 2021)

Teaching Coach: Dr. Yasser Hassebo

Teaching Mentor: Dr. Dugwon Seo

Fellows	Prep meeting	Practicum date	Course	Topic
Joan Gomez Paz	2/18	3/2	Engineering Design	Introduction to Mechanical Engineering design
Eder Herrera	2/19	3/12	Computer Application (Matlab programming)	Plotting in Matlab: xy plotting functions, subplots and overlay plots, special plot types
Alana Menendez	2/26	3/19	Computer Application (Matlab programming)	Advanced plotting in Matlab: import data from Excel files and plot. Data analysis, regression, etc.

- Fellows joined and observed 1-2 classes of Dr. Seo's lecture prior to their scheduled teaching dates.
- Prep meeting was held to review each fellow's class preparation and advise the teaching strategy
- Fellow's teaching practicum were observed and monitored by teaching coach and teaching mentor. Then, the feedback was given to provide suggestions and progress right after the lecture.

Fellows Teaching Practicum (TP) in LaGCC (Spring 2021)

Teaching Coach/Mentor : Dr. Yasser Hassebo

Fellows	Prep Meeting	Practicum Date	Follow-up Date	Course	Topic
Jorge Guerrero	3/1	4/20	5/19	Electric Circuits I	Operational Amplifier (Op. Amp.)
Rose Jimenez	3/8	3/11, 3/25, 4/29, 5/6, 5/20, 5/27, and 6/3	5/6	First Year Seminar for Engineering	Intro and research, Professional Societies, Writing Scientific report, How to be saucerful as a college student

- Jorge: Prep meeting was held to review Jorge's class presentation, pre-post assessment, and discussed the pedagogical themes to be implemented in his TP.
- Jorge's lectures were observed and monitored by teaching coach/mentor.
- An immediate feedback was provided after the lecture and then a follow-up meeting with a written feedback and suggestions was held on 5/19/2021.
- Rose joined and observed 7 classes of Dr. Hassebo's lectures. She participated in the class discussions 4 times. A follow-up meeting was conducted on 5/6/2021.

Training in Mentoring

LaGuardia Community College (LaGCC)

Summer 2021

H-AGEP CC Faculty: Dr. Yasser Hassebo

H-AGEP Fellow (UG Research Mentor): Jorge Guerrero Aguilar (ME, CCNY)

Undergraduate Student (UGS): Li Kuan Phang (LaGCC)

Project: Study and implementation of Lagrange Multiplier Constrained Optimization using MATLAB

Duration: 7/2/21 - 8/27/21 (8 weeks)

Prep conversation on mentoring undergraduate students (UGS) in conducting research was established on 6/11/2021 between Dr. Hassebo, Jorge, and Li Kuan (Liz). Prep meeting was held on 6/29 to discuss the logistics and to provide guidance and tips on mentoring activities. Then Jorge provided his UGS with the following:

- ✓ Planning: Research plan and weekly timeline/objective (8 objectives total)
- ✓ Evaluation and structure : Weekly progress report summarizing research progress is required from the UGS
- ✓ Organization: Dropbox folder was created to post all related info/docs and reports
- ✓ Communication: Secured same Zoom link for all meetings
- ✓ Connection: keep the teaching mentor (Prof. Hassebo) in the conversation loop
- ✓ Soft Skills: advising, guiding, teaching UGS to prepare scientific reports and presentations

Research Training in Mentoring Queensboro Community College (QCC) Summer 2021

H-AGEP CC Faculty: Dr. Dugwon Seo

H-AGEP Fellow (Research Mentor): Joan Gomez

Undergraduate Student: Steven Lleshi (QCC)

Duration: 6/28/21 - 8/12/21 (7 weeks)

Dr. Seo provided training to the H-AGEP Fellow on how to mentor undergraduate students in conducting research. The Fellow enhanced the following skills:

- ✓ Planning and managing the research timeline
- ✓ Selecting feasible topic and skills for the undergraduate student
- ✓ Teaching and advising research activity
- ✓ Evaluating UG student's research ability
- ✓ Guiding UG student to prepare a research report and presentation

Skills Improved Through the Mentoring Activity

The Fellow improves the following skills:

- ✓ Develop a research project plan and timeline
- ✓ Selection process of undergraduate students (UGS) (i.e. required skills set, interview, etc.)
- ✓ Evaluation and assessment of the UGS in the research projects
- ✓ Identify research topics that match UGS ability
- ✓ Guide and advise UGS in academic and non-academic aspects
- ✓ Improve soft skills
- ✓ Device a plan for the further work (Publications, next step, etc.)

Integrated Fellow Training, Career Advancement, and Transition to the Professoriate

Phase I: Mentoring and Networking

The group of mentors (dissertating advisor, teaching coach, and teaching mentor) monitors Fellow's career progress and provide guidance to Fellow's future academic career directions.

- ✓ **Individual Development Plan (IDP):** IDP includes information on the Fellow's short- and long-term plans.
- ✓ **Expanding the Network at CCs:** during completion of the teaching practicum, CC mentors introduce fellows to other CC faculty in their departments. Whenever possible, fellows are invited to attend workshops or presentations given by CC faculty at the H-AGEP CC partner institutions.
- ✓ **Expanding the Network Across the Nation:** Fellows are encouraged to join and participate in their STEM field-specific local/state/national professional organizations (e.g. ASCE, ASEE, SACNAS, etc) to build and expand their professional networks and seek out academic opportunities at community colleges. Fellows are encouraged, and supported, if possible, to attend state and/or national conferences.

Integrated Fellow Training, Career Advancement, and Transition to the Professoriate

Phase II: Professional Development

Prepare the Fellows for applying and entering a career in academia at CC's

- ✓ **H-AGEP Workshops:** Fellows are invited to attend workshops that are focused on searching, applying, and preparing to interview for academic positions at CC's. Fellows who have completed their teaching training and practicums are encouraged to submit potential job applications for review and participate in mock interviews.

Phase III: Applying, Finding, and Transitioning into a New Faculty Position at CCs

Alliance members provide technical support and mentoring to fellows as they apply, find, and transition into a new community college as adjunct or full-time faculty positions.

- ✓ **H-AGEP Fellows Support:** Fellows seek out additional support from Alliance members after they've attended the workshops if they need additional reviews of their CV's, teaching, research, and diversity statements, preparing for interviews, etc.
- ✓ **Resources for teaching at CCs:** the Alliance makes resources available to the Fellows on the website. Resources include information on teaching resources, working as an adjunct faculty.

Individual Development Plan

- ✓ An Individual Development Plan (IDP) was developed.
<https://eses.ccny.cuny.edu/fellows-individual-development-plan/>
- ✓ The Fellows fill out the the IDP.
- ✓ Individual meetings are held with each Fellows and their mentors (dissertating advisor, teaching coach, and teaching mentor) to discuss the IDP.



Individual Meetings with the Fellows

Individual meetings are being held with the fellows and their mentors.

The Fellows asked for more support in the areas listed below.

Senior Cohort

- ✓ Preparing a grant proposal for funding
- ✓ Locating sources of funding for research
- ✓ Designing a research project
- ✓ Presenting findings at a conference or via poster

New Fellows

- ✓ Using active learning techniques
- ✓ Familiar with and applying effective teaching methods
- ✓ Designing hybrid and/or online courses
- ✓ Designing a new course (face to face)



Professional Workshops

A series of workshops to support skill development and prepare the Fellows for the diverse responsibilities of the professoriate



- ✓ How to start and maintain an awesome career?
- ✓ Getting an academic job
- ✓ All-Inclusive Classrooms
- ✓ Mentoring Students
- ✓ Developing STEM Research and Educational Programs
- ✓ Time Management
- ✓ Negotiating Skills
- ✓ Community Colleges
- ✓ Diversity and Inclusion

Professional Development workshops

- **Developing STEM Research and Educational Programs - November 18th, 2020.** Panelists: Profs. Craig E. Tweedie (UTEP), and Syed Rashid Zaidi, Bronx College Community
- **Career Paths at Community Colleges workshop, October 21, 2021.** Panelists: Profs. Joe Barba (CCNY), Miguel Velez-Reyes (UTEP), Yasser Hassebo (LaGCC), Aparicio Carranza (CityTech) and Rachel Garcia (San Jacinto College).
- **Think of it as Strategic Persuasion: Effectively negotiate for what you need to be successful, November 12, 2021.** Speaker: Dr. Yvette Maria Huet
- **Faculty Job Application Workshop, February 7, 2022.** Panelists: Profs. Aparicio Carranza (CityTech), Rachel Garcia (San Jacinto College), Joe Barba (CCNY), Miguel Velez-Reyes (UTEP), Jose Pacheco (EPCC), Fred Moshary (CCNY), Reggie Blake (CityTech), Yasser Hassebo (LaGCC), and Rebecca Escamilla (EPCC).





H-AGEP ACCOMPLISHMENTS



- 25 Fellows have been recruited
- All Fellows completed the teaching training program
- 19 Fellows had in-classroom teaching experience at community colleges
- Fellow's successful stories:
 - One Fellow got the Tandon Faculty First Look Fellowship
 - Fellows have transitioned into professional jobs. Some of these include assistant professor of instruction at UTEP, and engineers at the Gulfstream Aerospace, NASA contractor, and El Paso Electrical Company.

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Thank you!

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