Noemi V. Mendoza Diaz Ph.D.
Cover Letter

March 29, 2014
Dr. Stuart Long, Search Committee Chair
Cullen College of Engineering
University of Houston

Dear Dr. Long,
It is with great enthusiasm that I write this letter to apply for the full-time, non-tenure track instructional-research faculty position to lead the Program for Mastery in Engineering Studies (PROMES) in the Cullen College of Engineering at the University of Houston.

My distinct combination of experience and expertise makes me an ideal candidate for this position because it includes:

- Postdoctoral research in Engineering Education at Purdue University, a Ph.D. in Educational Administration and Human Resource Development from Texas A&M University, a Master's Degree in Telecommunications Engineering, as well as a Bachelor's Degree in Electronics and Communications Engineering from the National Polytechnic Institute (IPN) in Mexico.
- Mentoring and tutoring of students at all levels of education, from Pre-Kindergarten to Doctoral students.
- Outreach experience, formal and informal, national and international within university and K-12 educational environments.
- Successful grant writing and management experience, within university and K-12 contexts and as an independent researcher.
- Leadership and "bridging" of diverse groups among engineering and education realms and within and outside the university setting, including local industries.
- Development, delivering, and evaluating educational and training programs for undergraduate and graduate students, K-12 students, and in-service teachers.
- Experience working within the primary and secondary educational systems.
- All the above with an emphasis on diverse students, including ethnic minorities and socioeconomically disadvantaged students.

The following highlights from my vita exhibit my verve and experience in engineering education; all of unique relevance for this position. I am a natural leader who enjoys and is fully committed to nurturing and promoting students to become leaders.

Successful Change Agent and Leader in Mentoring and Outreach (K-12, University & Industry): As a professor at two different Universities in Mexico, I was confronted with the challenge of bringing students and funding from the local schools and industries. In the specific case of Carmen University in Campeche (the petroleum port of Mexico), I was very active in the recruiting students for the continuing education specialization in Computer Networks. Thanks to this endeavor, the first local intranetwork (year 1998) was funded and developed at the university. These students

were fully engaged in the hands-on and practice-like activities to the point that they presently continue to maintain jobs in the telecommunications industries; one of those students is the current manager of the university's network.

At that same time, I started my work with the University Corporation for the Development of Internet (CUDI) where I founded two new communities (special interest groups), the community of education (2002) and the community of engineering education (2009). Within these communities I have organized multiple presentations and trainings, including a specialization in Distance Education that, in a joint-effort with Texas A&M University, certified 100 Professors of numerous Mexican Universities. At the K-12 levels, I brought the Boston Museum of Science's "Engineering is Elementary" curriculum to two elementary schools in Mexico during CUDI members' conference meetings (Querétaro and Campeche). I also participated in numerous mentoring and outreach efforts with the Institute for P-12 Engineering Research and Learning (INSPIRE)-Purdue; including the summer teacher trainings titled INSPIRE-Academies as well as the mentoring of graduate students who were analyzing and developing assessment tools for these academies. With the Brazos School for Inquiry and Creativity, a charter K-12 located in the Houston-Bryan areas, I developed programs such as the Latino Family nights sponsored by the Capital Fund Grant. I also organized career days and worked diligently in the recruitment of students. All these endeavors demonstrate my leadership capacity in matters related to mentoring, outreach and orientation of students and their families and communities.

Successful Grant-Writer and Funding Opportunities Maker: In addition to the experience with Carmen University (where I addressed local industry needs), during my doctoral program, I successfully secured NSF supplemental funding for Research Experiences for Undergraduates (REU). Recently, as an independent researcher, I obtained a seed grant for developing a computer adaptive testing system for electrical engineering students. At the K-12 levels, I obtained grants such as the Technology Lending Program (2012) that provided 70 laptops with mobile Internet access to middle school students of the Brazos School. These funding opportunities are evidence of my grant related skills.

Successful Trainer-Teacher-Professor: In a trainer, teacher, and professor capacity, during the last 17 years, I have developed, delivered and evaluated programs at all levels of education. At the graduate level I created and delivered curriculum in both the education and engineering areas, with the Computer Networks and the Distance Education/Theories of Education specializations. The evaluation of these graduate efforts consisted of state-of-the-art criterion-referenced assessments. At the undergraduate level I assisted and taught diverse courses, again in both education and engineering, including Differential Equations and Application of Telecommunications in Education. At the K-12 levels, I developed different teacher trainings, mostly related to technology integration for the Brazos School. I also delivered and evaluated the Boston Museum of Science curriculum with

elementary students. These trainer-teacher-professor experiences are proof of my ability to create, organize and assess educational and training programs.

Successful Diversity Advocate: My formal training in education and engineering places me in a very advantageous position within and across groups. In addition, my experience at all levels of education and in international settings complements this in terms of the way I address diversity. Moreover, I became passionate about socioeconomically disadvantaged groups and minorities through the projects I initiated and participated at Purdue and the Brazos School for Inquiry and Creativity, a multi-ethnic charter school with a 93% economically disadvantaged population located in the inner-city and semi-rural areas of Houston and Bryan. My ability to establish relationships between departments, faculty, students, and communities in the aid and retention of students is patent, especially to the diverse student body at the University of Houston.

As an active member of the American Society for Engineering Education, where I was recognized with the Educational Research and Methods Division Apprentice Faculty Grant Award in 2009, the Society for Advancement of Chicano and Native Americans in Science, or the International Society for Technology in Education, I guarantee a well-connected and key relationship developer with professional societies.

My **educational research interests** are focused in two of the five major research areas of the National Engineering Education Research Agenda:

1) *Engineering Learning Systems*—based on (a) my interests in the Networked Model of Curriculum and its associated Creative, Entrepreneurial and Leadership Learning Environments; and (b) my interest in new educational technologies such as Computer Adaptive Testing and Intelligent Tutors.
2) *Engineering Diversity and Inclusiveness*—based on my interest in socio-economically disadvantaged and diverse populations.

I am positive and very excited that my expertise could bring great value to the University of Houston as well as the surrounding communities in the area. I thank you for your consideration and look forward to hearing from you.

Sincerely,

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Secondary References

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Colleague and mentor. Chair of AFG Committee in ASEE-Educational Research Methods for the year I was recognized with the AFG.
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Mr. Carlos Casasus Lopez Hermosa
General Director of the University Corporation for the Advancement of Internet -CUDI where I have worked/volunteered for the last 13 years.
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