BEST PRACTICES: HISPANIC SERVING INSTITUTIONS AND THE PRODUCTION OF FUTURE LATINO DOCTORATES IN SCIENCE AND ENGINEERING

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Abstract — This study expands research begun as a baccalaureate origins study of Latino [U.S. citizens] who obtained their doctorates in science and engineering between 1993 and 1997. Data was disaggregated according to gender, Hispanic subgroup, and broad field of science. Institutions were ranked according to their rate of productivity in these categories, regardless of their size. Hispanic Serving Institutions (HSIs) figured prominently in these rankings. Recruitment and retention strategies, as well as cultural characteristics, at eleven of the most productive HSIs have been studied in an effort to develop a research-based set of best practices in the production of future Latino doctorates in S&E at Hispanic Serving Institutions.

Much has been written about the direct or indirect influence of the college environment on student development and success. Researchers such as Pascarella and Terenzini [1], Astin and Astin [2], and Chickering and Reisser [3] have agreed that certain institutional and departmental characteristics create academic, social and culturally relevant environments that promote success in special populations. Rodriguez [4] opined that there are specific strategies that may be employed to increase the persistence of minority students in S&E. Tidball [5] determined that special focus institutions make important contributions to their attending populations.

Indeed, examination of the Hispanic Serving Institutions in this study revealed that there are unique and culturally supportive environments and specific academic and affective strategies at these institutions, that when used in tandem, enhance the ability of Hispanic S&E students to pursue terminal degrees.

Findings indicate that Hispanic S&E students benefit from such retention strategies as peer tutoring, freshman orientation, undergraduate research opportunities, and the clustering of incoming S&E students designed to create learning communities. In addition, institutional factors responsible for creating a positive departmental and institutional culture identified in this study included a caring and committed faculty, support from the top administration, strong intervention strategies, good advising and counseling services, mentoring, and the availability of role models in the community.

The goal of the current study is to develop a research-based manual of best practices at the baccalaureate level in the production of future Latino doctorates in S&E at Hispanic Serving Institutions.