Student Retention
Mathematics and Science

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Student Retention in Higher Education

One of the most predominate challenges that many institutions continue to encounter today are primarily due to:

- Shrinking fiscal resources
- Minimal intervention by faculty members
The Retention Challenge is further exacerbated by

- First generation college students
- Historically underrepresented
- At-risk student populations
- Academically under-prepared
Through the deployment of effective retention methods and techniques, students are empowered to persevere toward completion.
This will generate scientific and technical professionals...

- Equipped with confidence and competence
- The appropriate academic skill set
- Abilities to solve difficult problems through innovation and creativity
- Further the advancement of humanity
Student retention mechanisms can be enhanced significantly by...

- Invigorating their keen awareness toward STEM disciplines
- Personal counseling
- Individual strategic academic advising
- Academic tutorials
- Academic scholarships
- Assistance with summer job placement and cooperative educational opportunities
Students must be supported with true compassion and empathy in regard to their personal issues, in a manner of strict confidentiality.

Counseling on this level will foster open communication to produce a family-oriented environment to reduce student tensions.
Individual strategic academic advisement strategies will provide students with adequate resources designed to enable their persistence toward graduation.

This is accomplished by advising students on individual course sequences, at the appropriate academic level, with intention to enrich their overall academic performance.
Effective tutorials in the core subject areas of mathematics and science is an essential retention tool.

The tutorial process can be further enhanced through the establishment of peer-to-peer networks and focused study groups.
Through these forms of group interaction:

- Students gain the potential to increase their subject knowledge base
- Enhance their self-confidence
- Establish camaraderie with one another
Resources should be developed with industry

- To provide academic scholarships
- Open avenues for students to engage in gainful summer employment
- Cooperative educational opportunities
Motivational workshops, professional seminars and orientation courses should be implemented to address societal issues.
- Break down barriers
- Dismiss destructive cultural innuendoes
- Expose students to practicing STEM professionals
A comprehensive retention environment should engage the participation of supportive faculty members who are sincere in retaining students to graduation, specifically in mathematics and science disciplines.
Through positive faculty interaction with students, academic performance will be accentuated.

Such measures are pivotal to ensure that academically talented students are empowered to achieve their highest potentials with confidence and competence.
Retention methods and techniques should be assessed regularly to harness best practices that are effective and to refine or eliminate protocols that are rendered obsolete.
Conclusion

- The barriers associated with student retention can be significantly reduced through the achievement of Core Structural Institutionalization that pervades the entire University, from top to bottom and throughout.