

Challenges encountered with HBCUs/MSIs



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- ▶ \$2.3B in 2015 revenues; over 9,100 employees
- ▶ Teledyne Technologies is a leading provider of sophisticated instrumentation, digital imaging products and software, aerospace and defense electronics, and engineered systems. For more information, visit Teledyne Technologies' website at www.teledyne.com.

Mission Systems

- Systems Engineering
- Modeling and Simulation
- Test and Evaluation



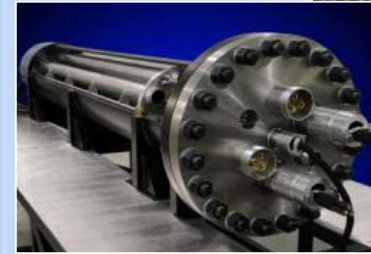
Space Systems and Commercial Space Imaging

- Multi-User System for Earth Sensing
- Mission Planning and Control Center Operations
- Payload/Cargo Integration
- Space Flight Hardware



Energy & Environment

- Chemical Processing Equipment
- Electrical Penetration Assemblies
- Facilities M&O
- Radiological/Classified Laboratories



Marine & Aviation

- Naval Vessel Design and Manufacture
- LCS Gun Mount
- Army Missile Round Trainer
- Mine Seeking Hardware



- ▶ **Scope: Provide Operations in support of the International Space Station (ISS) at MSFC in Huntsville, AL and Johnson Space Center (JSC) in Houston, TX.**
- ▶ **Includes mission preparation (plan), crew and flight controller training (train), and real-time (fly) requirements for spaceflight operations support and research utilization.**





- ▶ It's fairly easy to identify project needs and objectives for student/ university involvement. On the other hand it is sometimes difficult to identify a point of contact and/or decision maker.
- ▶ On most campuses, there are many different colleges, departments, independent labs, institutes, and offices. With whom do you initiate discussions? Professors, Deans, Contracts, Administration?
- ▶ In some cases, the contract agreement was with a third party or affiliate of the institution instead of directly with the school.



- ▶ **Some universities don't invoice for months which causes additional accounting work.**
 - ◆ There's nothing worse than waiting months to receive an invoice and then it's incorrect.

- ▶ **Other invoicing issues are:**
 - ◆ Delayed responses to communication about invoices.
 - ◆ Hours worked in our system not matching the university's invoices.
 - ◆ Billing for unallowable travel expenses.



- ▶ **Most projects are in support of contracted work and as such budgetary estimates are based on a certain level of support. To meet project milestones a certain amount of work needs to be completed by scheduled dates.**
 - ◆ In most cases loss time and revenue resulted from lack of student commitment and faculty involvement.
 - ◆ In some instances new students had to be recruited and hired in the middle of the projects.



► Other problems encountered:

- ◆ Recruiting students in a timely manner- Late Spring, Summer, and late Fall are the most difficult times to identify students for projects.
- ◆ Arranging housing or affordable living accommodations- Most leases are six months to a year. Students tend to be on semester schedules.
- ◆ Transportation- In most cases this is covered by the student. If travel is required for the project the student is reimbursed by the school.
- ◆ Security clearances- Some projects require background checks and U.S. citizenship.
- ◆ Semester schedules- Most students don't want to delay graduation for a co-op.



- ▶ **Forbes Magazine:**

- ◆ Diverse teams outperform their counterparts by more than one third.

- ▶ **Chronicle of Higher Education (Special Report on Diversity):**

- ◆ Changing demographics in our country's public high schools show that by 2020, 45% of graduates will be minority students.

- ▶ **Diversity is good for our workforce and our nation's future in space, scientific research and innovation. Businesses that want to thrive must embrace this new and exciting statistic and pave pathways to welcome these students.**



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