BUILDING & LEVERAGING SUPPORTIVE INDUSTRY PARTNERSHIPS CASE STUDY

LASER-TEC
LASER & FIBER OPTICS REGIONAL CENTER

CENTRAL CAROLINA COMMUNITY COLLEGE

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CCCC LASER PROGRAM BRIEF

- Established in 1987
- Located at the Lillington, NC Campus
- Two Year Associate Degree in Laser & Photonics Technology
  - 1st Year – Electronics Focus
  - 2nd Year – Photonics Focus
- LASER-TEC CO-PI
- Two Core Instructors – J. Lavere (Electronics) & G. Beasley (Photonics)

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TYPICAL ADVISORY COMMITTEE PROTOCOL

- Meet once a year
- Pick a meeting date
- Invite mostly same previous members
- Meet
- Issue minutes
- Wait until next year to worry about again

ADVISORY COMMITTEE RELATED QUESTION

- Why go through the advisory committee pain every year????

PROGRAM INDUSTRY ADVISORY COMMITTEE TYPICAL PURPOSE

- To satisfy ADMINISTRATORS!!!!
- Just a check mark!
- Maybe follow-up on a few action items

PROGRAM INDUSTRY ADVISORY COMMITTEE TYPICAL PURPOSE PARADIGM SHIFT

- Why not take advantage of the possible benefits?
- Actually use it for Continuous Improvement!
- Three Key Success Program Factors
  - Recruitment, Preparation & Placement
    - Recruit good students
    - Prepare them well
    - Help them find jobs
- Advisory Committee Members can help with all of these!

PROGRAM INDUSTRY ADVISORY COMMITTEE KEY SUCCESS FACTORS

- Member Make-Up
  - Needs to include representation from all Key-Stake Holders
    - Feeder School Representatives - Helps to Fill Pipeline/Recruiting
    - Research Scientists – Resource for Future Technology Direction, Lab Ideas, Tours and Networking Source
    - Industry Partners – Maintain Educational Standards Alignment, Placement Opportunities, Intern Opportunities, Tours, and Equipment Donations
    - College Representatives - Recruiters, Placement Representatives, Administration, Others
    - Include Students (at least 2nd year)
- Meeting Time and Location
  - Select “typical” “After-Work-Hours” meeting time
  - Change meeting location frequently – Include industry and university research tours
- Make changes based on feedback!!!!!

CCCC LPT PROGRAM INDUSTRY ADVISORY COMMITTEE HISTORY AND CURRENT STATUS

- Previous Advisory Committee members were essentially technical industry partners in immediate area – some photonics (majority telecommunications focus) and CCCC staff and faculty
- 2001 Committee (Meeting Size & Member Base = 7) – Small contingent of industry (tele had busted), but added two photonics' professors – one from Duke & one from NCSU
- Addition of photonics' professors really help strengthen the committee
  - Helped establish networks with other photonics industry partners
  - Suggested other areas of concentration in line with new research
- 2002 – 2005 (Meeting Size = 10-12 & Member Base = 15-20) – Added other university professors, grew industry partner base, inviting every contact made, including outside of state, & started using partner meeting locations with tours

CCCC LPT PROGRAM INDUSTRY ADVISORY COMMITTEE HISTORY AND CURRENT STATUS, continued

- 2006 – 2009 (Meeting Size = 10-15 & Member Base = 20-25) Continued to grew industry partner base, still inviting every contact made, including outside of state & added other key stake holders – HS Teachers & Safety Officer
- 2010 – 2013 (Meeting Size = 10-15 & Member Base = 25-30 - w/o students) Continued to grew industry partner base, still inviting every contact made, including outside of state, added additional high school teacher partners, and began inviting 2nd year students
- 2014 – (Meeting Size = 14 & Member Base = 30 - w/o 10 students) Added LASER-TEC PI
- 2015 - (Meeting Size = 16 & Member Base = 35 - w/o 12 students) Coupled meeting with International Year of Light Celebration event for the public

CCCC LPT PROGRAM INDUSTRY ADVISORY COMMITTEE HISTORY AND CURRENT STATUS, continued

- Current Status - 39 members
  - 24 Industry Partners
  - 3 High School STEM Educators
  - 1 CCCC Electronics Engineering Technology Program Lead Instructor
  - 1 CCCC Electronic Instructor
  - 1 CCCC Industry Liaison
  - 1 CCCC Placement Coordinator
  - 1 Other Community College Engineering Department Chair
  - 4 Research Scientist/Professors
  - 1 Industry Safety Officer
  - 1 LASER-TEC Member
  - 1 Research Facility Operations Director

METHODS USED TO IDENTIFY POTENTIAL PROGRAM INDUSTRY PARTNERS

- Invite company representatives reaching out to hire students
  - Send previous meeting minutes
  - Add to contact list
  - You never know when you will get a diamond!
- Keep contact, and network with university representatives with strong industry connections
- Work with your college's industry liaisons
- Search databases (OP-TEC, state industry dB, etc.) and reach-out

METHODS USED TO IDENTIFY POTENTIAL PROGRAM UNIVERSITY/RESEARCH PARTNERS

- Visit the campus/departments of interest
- Impromptu call – conversation with one may lead to another
- Ask industry partners
- Research Bio's

METHODS USED TO IDENTIFY POTENTIAL PROGRAM "PIPELINE" PARTNERS

- Invite CTE/STEM Teachers – Ones you visit for recruiting
  - Positive student role models
    - Like their job
    - Influence students – change lives
  - Target technology/engineering teachers
  - HS – First Priority/MS – Second Priority
- CTE Directors

APPROACHES FOR MAINTAINING ON-GOING PARTNERSHIPS

- Send out periodic emails – Not requesting a response, unless necessary!
  - In other words – Bug, but don't bother! They usually have their hands full with their work - They will reply to you if it helps them.
  - This is only meant to keep them aware of your program's needs.
  - Examples
    - Meeting minutes
    - Year End Report
    - Intern or placement opportunities
- Constant contact also keeps them aware of possible students available to fill industry partner employment needs

APPROACHES FOR MAINTAINING ON-GOING PARTNERSHIPS, continued

- With permission, publish a newspaper article about who an industry partner hired
- See if they are willing to host a advisory committee meeting
  - It is very important to move the meeting to interesting tour industry and university sites

APPROACHES USED TO CREATE MAJOR ADVANTAGES FOR ADVISORY COMMITTEE MEMBERSHIP

- Creation of Networking Opportunities
  - Industry partner to industry partner – Customer/supplier relationships
  - Industry partners to University Research Scientist
  - Industry partners to 2nd year students for informal interviews
  - High School teachers with all – They share their experiences with hundreds of potential students for your program!
- Constant contact keeps them aware of possible students available to fill industry partner employment needs

APPROACHES USED TO CREATE MAJOR ADVANTAGES FOR ADVISORY COMMITTEE MEMBERSHIP, continued

- Tours of Exciting Sites
  - Industry Tours
  - University Research Labs
- Use their feedback – Creates pride-of-ownership

CREATING POSITIVE RELATIONSHIPS WITH INDUSTRY PARTNERSHIPS

- Maintain privacy with their contact information
- Be a buffer for others who may want to make requests of them
  - Fund raising
  - Extra work
  - You will have to decide if it is worth the risks of loosing a partner
- Be careful about creating competition for graduates – Try to stay neutral!
- Don't burden the same partner often for hosting meetings/tours
- Don't push requests for equipment donations, internships, or placement – Just make them aware of your needs on one slide each meeting
- Be honest, especially about your students, when giving a reference

SOLID STATE LASER (SSL) INDUSTRY PARTNERSHIPS CASE STUDY

- Fall 2013 advisory meeting – Partnership plan was developed
  - MegaWatt Lasers would coach a laser student through high energy solid state pulse laser design by weekly conference calls for their spring class projects class
  - Synoptics (Northrop Grumman Division) offered to participate in the calls for advice/help with required solid state crystals manufacturing
  - Spring 2014 – Project was very successful, and student was offered a position by both companies – Selected MegaWatt Lasers

SOLID STATE LASER (SSL) INDUSTRY PARTNERSHIPS CASE STUDY, continued

- Fall 2014 advisory meeting – Internship offer
  - MegaWatt Lasers offered to intern a laser student
  - During internship, student would build a high energy solid state pulse laser
  - Synoptics offered to build the crystals for the laser

SOLID STATE LASER (SSL) INDUSTRY PARTNERSHIPS CASE STUDY, continued

- Spring 2015
  - Student built the high energy solid state pulse laser and documented the project into a final project report
  - Synoptics manufactured the crystals and shipped them to the student for the laser
  - MegaWatt donated the laser ($20K) and Synoptics donated the crystals ($9K) for future teaching equipment for the CCCC laser program
  - Student was hired at the end of the internship
- The design project report, build project report, laser and crystals are being used in lecture and labs to prepare students for employment at MegaWatt and Synoptics!

BENEFITS REALIZED FROM THE SOLID STATE LASER (SSL) INDUSTRY PARTNERSHIPS

- Students acquired a significant amount of knowledge and experience from hands-on industry work
- Students received a job and are loving their work
- Company was able to gain some working knowledge of the students personalities, strengths and weaknesses prior to offering full time employment
- Company hired two top students and filled employment needs
- School received educational teaching materials for future students
  - Documentation & Equipment
- Win-Win-Win!!

BENEFITS OF PARTNERSHIPS

- Discussion
- Comments
- Questions

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