

RASEM Mentorships Prepare Students with Disabilities Majoring in SEMT ENTRY POINT! Summer Internships

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What is RASEM?

The Regional Alliance for Science, Engineering, and Mathematics for Students with Disabilities, primarily sponsored by the National Science Foundation, is devoted to increasing the numbers of persons with disabilities who enter careers in science, engineering, math, and technology (SEMT), areas of endeavor in which people with disabilities are drastically underrepresented. Ironically, is they are highly adaptable, skilled people, naturally solving problems at every moment in order to survive in a “user unfriendly” environment.

RASEM is administered by Associate Dean, Dr. Bill McCarthy, of the New Mexico State University College of Engineering. Among the partners located in Oklahoma, west Texas, and New Mexico are eight four-year universities, thirteen community colleges, two national labs, and five affiliate partners composed of a variety of service provider organizations.

To accomplish its mission, RASEM, focuses in on three areas to increase awareness, provide support, and inspire the motivation to move into those fields into which we have been denied entry because of short-sightedness on the part of society as a whole:

1. Partner projects

Partners in the Alliance submit proposals to RASEM for projects that take place on their campus.

2. Teacher Mini-Grants

Grants are issued to K-12 teachers submitting proposals on a competitive basis to fund innovative hands-on activities to help students with disabilities through critical educational transitions leading to SEMT career paths.

3. Mentorships

Qualified SEMT college students are granted financial aid with stipends and mentorships, and act as role-models for secondary school students with disabilities.

What Does This Have To Do With Summer Internships?

To reiterate, students with disabilities are critically underrepresented in science, engineering, mathematics, and technology careers (SEMT). Perceived as ineffective in meeting the intellectual and physical demands of SEMT, their natural problem-solving skills, a characteristic of successful SEMT professionals, are overlooked. Achievement by SEMT students with disabilities is relegated to the miraculous or anomalous - their efforts met with indifference or patronization. Routinely waived from hard core science courses, advised against SEMT careers, they are discouraged from indulging in dreams other than those that are “commensurate with their disability” rather than their abilities.

Ultimately, resources remain undeveloped, teachers receive little or no disability related training, negative attitudes are reinforced because students lose hope and incentive, and funding sources are diverted to more “realistic goals”. Undaunted, students pursue their dreams supported by their parents and teachers, though they begin from behind. Eventually they graduate from college and begin looking

for a job. And this is where RASEM begins to move into the background and other programs, like ENTRY POINT!, begin to take priority. Up to this point, RASEM has provided support and encouragement to those students pursuing their SEMT dreams. ENTRY POINT! now introduces them into the real world of work.

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1. Partner projects

Partners in the Alliance are strongly encouraged to submit proposals to RASEM for projects that primarily take place on their campus. Examples of such projects include:

- a bridging program at UT/El Paso in which students are familiarized with college life and participate in science field trips;
- the Children’s College at UNM/Los Alamos in which middle school children with disabilities and temporarily able-bodied students participate in hands-on science projects for three weeks;
- the Science summer camp at Diné Community College in which nearly 60 students participate;
- the MAVIS, Math Accessible for Visually Impaired Students, a research project designed to investigate methods of producing Brailled math text and other technical materials for use by students in the classroom. One of the objectives is to produce such material in a timely fashion, i.e., when the other students receive their materials. MAVIS is now a full-fledged project funded by the National Science Foundation for a period of three years; or
- the Ghost Ranch project which is now in the process of applying for NSF funds to also become

a full-fledged program. Student participants of Ghost Ranch spend two one-week sessions at Ghost Ranch, New Mexico to study a variety of science topics.

2. Teacher Mini-Grants

This component of the program is directed by Dr. Lily Chu, the RASEM program evaluator. Through this component, grants have been issued to K-12 school teachers to carry out innovative hands-on activities to help students with disabilities through critical educational transitions leading to SEMT career paths. To accomplish this objective, projects incorporate field trips, hands-on science activities, collaboration between general ed teachers and special ed teachers, schools, and community organizations and businesses. Examples include a project in which students built their own telescopes, toured the VLA, and actually took a field trip in which they used their telescopes to take night readings of the sky. In other projects students learned or improved such skills as planetary and astronomical science, aerodynamics, computer skills, math, functional math skills, life sciences, construction/design, and blueprint reading.

To prepare for writing the proposals teachers attend grant writing workshops conducted by Dr.Chu. At the end of the project teachers are required to share their experience through conference

presentations, newspaper/journal/magazine articles, etc. Collaboration between school districts and local organizations such as community colleges or universities, is also encouraged. Cost sharing is also an important ingredient for a successful project

3. Mentorships

Qualified SEMT college students are granted financial aid with stipends and mentorships, and act as role-models for secondary school students with disabilities while maintaining email contact with them and their teachers. College students with disabilities enrolled at any of the RASEM partners may apply for the \$2,000/calendar-year Mentorships or the \$750/calendar-year Stipends. Mentors must maintain a satisfactory academic standing and mentor secondary school students with disabilities. Stipends are awarded for performing work assignments at the Regional Center. RASEM also helps secure personal care attendants, technical readers, interpreters, notetakers, and science, engineering, and/or math (SEMT) tutors for RASEM students. Direct funding for these services are provided by RASEM's NMSU headquarters. Precollege students with disabilities can apply for \$20/month./academic year stipends pending participation in SEMT activities at their schools, through RASEM sponsored SEMT summer activities, and satisfactory academic achievements in the following academic year.

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For the uninitiated, learning how to interview, write resumes, and in general go through the sometimes arduous task of finding employment is a "handicap". You might even cut your hair and put on a tie. Graduates learn how to jump through these employment hoops, dismayed when faced with a weak job market, but happy to hear that things are looking up. Finally, after several interviews, disappointments, possible leads, bum stirs, and at a time when you think all is lost, a letter arrives offering you a position. You gladly take it. You buy that new Ford Explorer you've been dreaming about, check the credit limit on your new VISA card, and begin making plans for moving your stuff, a collection of CDs and an old pair of roller-blades. You begin looking for a place to live in a town you've never been to, maybe in the middle of nowhere, maybe near a large city, maybe in a large city a thousand miles from home with weather that remains in the triple digits all summer, raining constantly, bitterly cold, typified by hurricanes, tornados, earthquakes, mudslides, or bone dry.

You wonder, “What will the ‘workplace’ will be like”. You might even imagine yourself staggering your new employers with your knowledge, mesmerizing them with your wit, and impressing them with your skills. You look forward to being put in charge of a very important project and having an office.

When you report for work you are introduced to a variety of supervisors whose names you can’t remember and told that you will be training for another six months before you can do any “real” work. A week later those people you met still don’t remember your name.

Only the Beginning

That scenario may or may not ring a bell, but for employees with disabilities it’s only the beginning. You have additional priorities involving questions about accommodation at work. How aware is my new supervisor and my fellow employees about disability? How am I going to get back and forth to work? Is there a physician in town that is trained in providing care to people with disabilities?

For some students much of the stress of entering the workforce is eased by participating in summer internships such as ENTRY POINT! Rather than plunging headlong into the unknown, internships help students gain a perspective in which their academic and workplace experiences are integrated into an idea that makes sense. They return to school with a better understanding of why they are studying certain topics and that really there is much, much more to learn. Their experience at work teaches them that the people at work are really very helpful, accommodating, and friendly, and that you are expected to meet deadlines and work as a team member. You learn also that an important part of work is having a mentor who can guide you in the intricacies of your work and the workplace culture. All of this makes for a more confident, open-minded, responsible graduate. It is important to note that the internship work is not just paper-filing, but work that applies directly to their future work as high-tech professionals

Students with disabilities learn how to leave their support system behind for a strange place. They learn that they can handle being away from home and best of all, they learn that they can live independently. Employers learn the value of employees with disabilities who have those natural problem solving skills typical of SEMT professionals.

True to the Notion of Myth

So back to the real world through the ENTRY POINT! Internships. In a subtle way, the ENTRY POINT! Summer intern program is true to the notion of myth—that our lives are in tune with forces of which we know little of, but which form the basis of our lives. As initiates, these interns are in step with the myth of the orphaned child, a story that appears in almost every culture and in almost every era. Exposed and vulnerable, the child ultimately experiences an eye-opening epiphany that carries it to a deeper point of self-understanding.

The profundity of the preceding may seem out of proportion when viewed through the perspective of the day-to-day concerns that people with disabilities have at work or at home—but to pursue one’s dreams, especially deeply felt dreams, is profound.

Brief BioData

Ed Misquez

Ed Misquez is the assistant director of the Regional Alliance for Science, Engineering, and Mathematics for Students with Disabilities (RASEM), a program established to promote careers in science, engineering, and mathematics for persons with disabilities. He has an associates degree in engineering technology and a masters degree in technical and professional communication. Over the 14 years, he has been an advocate for and involved in programs for persons with disabilities in New Mexico and helped establish the first independent living center in southern New Mexico.

William C. McCarthy

Professor McCarthy, associate dean of the New Mexico State University College of Engineering, is also a Registered Professional Engineer in New Mexico. A wheelchair user himself, he works with students with disabilities as project director and Principal Investigator for the National Science Foundation-funded Regional Alliance for Science, Engineering, and Mathematics for Students with Disabilities.