



(a nonprofit  
organization,  
founded in 1978)  
<http://stemd.org>

# Foundation for Science and Disability Newsletter

<https://www.facebook.com/groups/360413492800/>

**February 2018**

## **Student Grant Awardees since 1990**

|      |  |
|------|--|
| 1990 | Wendy Pava, Birgit Wolz, Elaine Hall             |
| 1991 | Kevin Wilkins, Shan Ming Lee                     |
| 1992 | Meghal Antani, Lynn Hanninen,<br>Mara Frohlinger |
| 1993 | David Fass, William Hylton                       |
| 1995 | Chris Tromborg                                   |
| 1996 | Anne-Michelle Singleton                          |
| 1997 | Leslie Harper                                    |
| 1998 | Maura O'Modhrain                                 |
| 1999 | Joseph Barbera, Byunggyoo Kim                    |
| 2000 | Jennifer Last                                    |
| 2001 | Cassandra Quave                                  |
| 2002 | My Lien Nguyen                                   |
| 2003 | Mark Woods                                       |
| 2004 | Jessica Mahood                                   |
| 2005 | Cheryl Fogle                                     |
| 2007 | Melodi King                                      |
| 2008 | Ryan McKindles                                   |
| 2009 | Emma Sacks                                       |
| 2010 | Shaun Kane                                       |
| 2011 | Lisa Dunning                                     |
| 2012 | Kim Yeoman                                       |
| 2013 | Naomi Delventhal                                 |
| 2014 | Amy Nichols                                      |
| 2015 | Rosemarie Figueroa                               |
| 2016 | Heather Page                                     |
| 2017 | Rachel Wiley                                     |

## President's Corner

-Richard Mankin

This is the 43<sup>rd</sup> anniversary of the founding of FSD. Since 1975, some experiences of scientists with disabilities in the work place have improved and others not so much. In the '70s, for example, it was sometimes difficult to attend scientific meetings. Shirley Malcolm of the American Association for the Advancement of Science (AAAS) offers a perspective on those times on p. 3. The current status of scientists with disabilities is discussed in a recent book on assistive technology by the National Academy of Sciences (see p. 4). Progress has occurred, but some things have not changed much.

This year there has been considerable international activity to improve the plight of disabled persons worldwide. I hope to see several of you at the upcoming annual meeting, and plan future activities to increase representation of persons with disabilities in the scientific workforce.

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**The next annual  
meeting of FSD is 9:00  
AM-12:00 PM, Saturday,  
February 17, 2018 in Rm  
602 of the Hilton Austin,  
Austin, TX**

*Richard Mankin*

2/5/18.

## Notes from students and colleagues

A note from Rachel Wiley, a doctoral candidate and the 2017 Foundation for Science and Disability Science Student Grant recipient.

I am honored to have been selected as the 2017 Foundation for Science and Disability (FSD) Science Student Grant recipient. Currently, I am a Ph.D. Candidate in the Center for Human Identification at the University of North Texas Health Science Center in Fort Worth, TX. By receiving the FSD Science Student Award, I was able to continue my dissertation research titled "Typing highly degraded DNA using circularized molecules and target enrichment" under the mentorship of Dr. Bruce Budowle, a world-renowned forensic geneticist. Through my dissertation work, I hope to make a significant advancement to the field of forensic DNA analysis; to develop a method that provides a means to recover genetic information from sources of highly compromised biological samples (e.g., human skeletal remains) that were once believed to be impossible to analyze.

In the past year, I have made considerable progress on my dissertation research project. Forensic biological evidence often contains highly damaged or degraded DNA posing substantial challenges for forensic investigators and genetic profiling. Currently, genetic testing for challenged samples exploit the analysis of mitochondrial DNA (mtDNA) due to its small structure and abundance within the cell. However, mtDNA, due to it being maternally inherited and lack of genetic recombination, cannot achieve the discriminatory power obtained by autosomal (nuclear) genetic markers. In order to increase the genetic information that may be obtained from low quantity and poor quality samples, methods are needed to enrich and amplify the very limited nuclear DNA contained within a compromised biological sample. Such methods have been the focus of my current genetic research. Through the combination of certain molecular biology techniques, such as circularization of fragmented genomic DNA, genomic capture, and rolling circle amplification (RCA), there is the potential to enrich and amplify damaged or degraded DNA. The enriched product can then be sequenced using massively parallel sequencing (MPS). If and when successful, this novel method would benefit society by aiding in the identification of missing persons, contribute to solving criminal investigations, and even address historical, archaeological, and anthropological questions. Currently, optimization of the circularization process and custom design and manufacturing of a genomic capture panel have been my main experimental focus.

To date, there have been no publications submitted for this work; however, the first phase of the research is nearing completion for submission of a manuscript. This research was presented at the 28<sup>th</sup> International Symposium of Human Identification in Seattle, WA. Additionally, I was recently awarded a National Institute of Justice (NIJ) Graduate Research Fellowship in Science, Technology, Engineering and Mathematics (STEM) for my continued work on this project. I have also been selected to serve as Chair for the 2018 Gordon Research Seminar on the Forensic Analysis of Human DNA to be held at the Jordan Hotel at Sunday River in Newry, Maine in June 2018. To further expand my knowledge and skill base as a researcher, I have worked on several smaller projects in the areas of microbial forensics, Rapid DNA typing, and alternative sample collection methods. Two publications in the journal *Forensic Science International: Genetics* have resulted from these side projects.

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Gilbert Lopez, a graduate student at California State University, Los Angeles, sent us the following note about his activities since the last newsletter:

I have been working at TESLA for last 8 months on the newly expected Model 3 production car. Also, I am working towards my MS degree on a Specialty Equipment Market Association scholarship and recently started experimenting with Hydrogen in classic cars. Here is a You Tube segment on my Hydrogen work:

<https://www.youtube.com/watch?v=16USy2b2sqM&feature=youtu.be>

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Recently I received an email from Taniah Hamilton, asking about the Foundation for Science and Disability grants. She notes: I am from Indianapolis, IN, and I have been accepted into Indiana University (IU) and Indiana University and Purdue University Indianapolis (IUPUI) program for Informatics and Computing Science. This program is called IDEW, Informatics Diversity-Enhanced Workforce. The main goal of this program is to help the technology field grow in having a variety of people from mixed backgrounds. I am a high school intern at Salesforce. In my future career I plan on going full into software development and business, or design and customize prostheses.

We hope the best for you, Taniah!

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Laureen Summers of AAAS has this update for the Entry Point! program:

Entry Point! this year has two company partners at \$5,000 each and six NSF-funded Research experiences for undergraduates who pay \$1500 each for 1-3 students. There's a continual pursuit of new partners.

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#### Reflections on FSD Origins and its Current Environment

In this section of the newsletter we present some background on the origins of AAAS involvement in activities to promote integration of persons with disabilities into the scientific workforce as well as some commentary on the current disability initiatives in the national and international community. First is an essay from the NSF INCLUDES Open Forum group in Trellis, a science communication tool sponsored by AAAS to help interconnect the scientific community: <http://www.trelliscience.com/NSFINCLUDESOpenForum/>

Reflecting On Our Roots--Part Five: The Origins of the AAAS Project on Science, Technology and Disability - by Shirley Malcom

Shirley Malcom is Director of the Education and Human Resources Programs at the American Association for the Advancement of Science

"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has."--Margaret Mead  
Whenever we look at programs that have been undertaken to support diversity in STEM, at the base of that work are often advocates who push for change. One such case relates to efforts to address the needs of persons with disabilities in science.

Chemist and AAAS member John Gavin reached out to AAAS in the early 1970s, pointing out that "the handicapped" in science also faced barriers and that legal protections were being extended to persons from those groups. The AAAS board expanded the mandate of the Committee and Office of Opportunities in Science from women and underrepresented minorities to include scientists and engineers with disabilities. Much of this origin work around STEM and disability was funded by the National Science Foundation, such as an early project to identify a Resource Group of Scientists and Engineers with Disabilities. The scientists and engineers with disabilities who advised AAAS urged efforts to make the association's Annual Meeting fully accessible, given the need to participate in conferences and meetings to support continued development and professional advancement.

Making the 1976 Boston meeting of AAAS was a non-trivial task. There were no federal laws requiring accessibility which means that there were not even hotel rooms for meeting attendees who needed accommodations. While

AAAS could make the program available in Braille or provide oral and sign language interpretation, the association could only use its buying power to insist on accessible meeting and sleeping rooms. This sometimes meant that doors had to be widened or grab bars and ramps installed for wheelchair riders. Based on these experiences AAAS published a report, *Barrier-Free Meetings: A Guide for Professional Associations*, that became a best seller as attitudes and laws around inclusion began to change.

It is useful to reflect on the history of organizations that have been established to provide support and leadership in diversity and inclusion in STEM. While some of these organizations have a long history (e.g., Graduate Women in Science [1921] and Society of Women Engineers [1950]), others date from the civil rights era:

- National Association of Mathematicians (1969)

Association for Women in Science (AWIS) (1971) (founded at a FASEB meeting)

National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) (1972)

Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) (1973) (rumored to have been founded at a AAAS meeting in an elevator)

Society of Hispanic Professional Engineers (SHPE) (1974)

National Society of Black Engineers (NSBE) (1975)

American Indian Science and Engineering Society (AISES) (1977)

National Society of Black Physicists (NSBP) (1977)

National Organization of Gay and Lesbian Scientists and Technical Professionals (NOGLSTP) (1983)

A small group of thoughtful, committed scientists and engineers--committed to changing the face of STEM

For a snapshot of the current status of disability initiatives in the US workplace, we can take a quick look at a study published last year by the National Academy of Sciences, "The Promise of Assistive Technology to Enhance Activity and Work Participation." The study describes a series of prosthetic and sensory assistive devices that have been successfully used in work environments. It concludes that "Appropriate-quality assistive devices can help mitigate impairments sufficiently to allow many persons with disabilities to work. However, environmental, societal, and personal factors are as important as assistive technology in determining individuals' functioning with respect to employment." This last caveat likely contributes to the well-known problem that only 41% of working age persons with disabilities are employed currently, compared with 79% percent of nondisabled persons.

For international workplaces, the link: <https://www.un.org/development/desa/disabilities/news/dspd/un-and-disability.html>, focusing in particular on the Convention on the Rights of Persons with Disabilities adopted in 2006, provides a summary of recent disability initiatives by the United Nations (UN). Recently, UNICEF published a book, *State of the World's Children*, which focuses on technology that can be helpful for integrating persons with disabilities into the workforce.

One of FSD's concerns is accessibility of scientific websites to persons with disabilities. International efforts in this regard are being sponsored by organizations such as the Global Initiative for Inclusive Information and Communication Technologies: <http://www.g3ict.org/>. Closer to home, Section 508 has been updated <http://www.govtech.com/internet/Section-508-Gets-an-Update-New-Web-Accessibility-Guidelines-for-Government-Sites-Take-Effect-in-January.html>, Yale has just announced a new policy of website accessibility to persons with disabilities: <https://news.yale.edu/2018/01/26/new-policy-yale-websites-should-be-accessible-those-disabilities>, and Google has launched a disability support team to answer questions about using assistive technology with Google products. <https://www.google.com/accessibility/blog/post/announce-disability-support.html>

Here are the minutes of the FSD 2017 Annual meeting in Boston:

## FOUNDATION FOR SCIENCE AND DISABILITY (FSD)

### Annual Meeting Minutes

10:00 AM -12:00 PM, Saturday, February 18, 2017

Accessibility and Inclusion Room (Hynes Convention Center)

Boston, MA

- Call to Order/Introductions:

President Richard Mankin called the meeting to order and introduced special guests, Kathi Kowalski and Mahadeo Sukhai. Kathi, an independent journalist based near Cleveland, Ohio, discussed her interests in developing and publishing narratives about activities of scientists and students with disabilities, as discussed further in New Business below. Mahadeo, a cancer genomics researcher at the Advanced Molecular Diagnostics Laboratory in the Cancer Genomics Program at the University Health Network in Toronto, Canada, discussed his research and his activities in mentoring and advising students and persons with visual disabilities. Also present were FSD members Imke Durre, Inge Durre, Yoshiko Miwa, and Laureen Summers.

- Old Business:

There was discussion about the activities of members since last year. Yoshiko Miwa discussed her recent publications and distributed copies of publications translated into English. In her writings, Yoshiko has particular interest in the context of disabled professional individuals trying to develop careers within their professions, their context within the society of disabled persons, and their context within society as a whole. These contexts can be quite different among different professions and in different societal cultures. We briefly discussed differences in how disabled persons are integrated into the work forces of Northern European countries, the United States, Japan, and the developing countries. Yoshiko noted also that the extent of public assistance for persons with disabilities in Japan is still in flux but some progress has been achieved in medical assistance for persons with psychiatric disabilities. After the meeting, Yoshiko shared some of the pictures she took of the participants:

[https://www.dropbox.com/sh/mqao2hawu907nnp/AABN\\_NHYp2oHNvpZx71J0G0Va?dl=0](https://www.dropbox.com/sh/mqao2hawu907nnp/AABN_NHYp2oHNvpZx71J0G0Va?dl=0)

Laureen Summers discussed her searches this year to find new partners and sources of funding for EntryPoint student internship positions. Laureen Summers and Imke Durre have been in contact with AAAS staff regarding making the AAAS Trellis and all aspects of the AAAS websites accessible to persons with disabilities. AAAS has engaged a consultant who has made recommendations for bringing Trellis up to the standards of the Web Content Accessibility Guidelines 2.0 of the Worldwide Web Consortium and is currently working on implementing these recommendations. The same consultant is currently examining the remainder of AAAS' online presence.

Discussion continued on networking and on how to provide greater value to young persons interested in FSD membership. The Foundation has a goal to facilitate and encourage networking among members, with the purpose of enhancing the progress of individuals with disabilities in their path towards and through a scientific career. One of the students who applied for the 2017 graduate student grant, for example, asked for some advice on what might be the best career path after receiving a degree in mechanical engineering. It was suggested that FSD establish some form of online discussion forum where such questions can be posted and discussed and which FSD members and FSD grant applicants will be invited to join the forum. Facebook and LinkedIn discussion groups were recommended as good starting points given that FSD already has an

account on each of these platforms. Mahadeo offered to explore the whether a communications person in his organization can provide assistance in setting up such online forums. Any additional suggestions that increase the capability of members to network are welcome.

- Minutes - February 13, 2016 (Washington, DC):

The minutes from the Washington DC meeting were approved as posted on the FSD web site (<http://stemd.org>). If anyone finds an error, please alert president Richard Mankin ([rmankin1@ufl.edu](mailto:rmankin1@ufl.edu)) and it will be corrected. Time did not permit discussion of one New Business item considered last year, a suggestion that FSD offer to partner with AAAS and the other sponsors of the AAAS Minority and Women Scientists and Engineers Breakfast to enable the FSD student grant honoree each year to be recognized at the breakfast along with other graduate students receiving awards. We note here, however, that some of the breakfast meeting organizers were contacted and it was determined that the logistics of adding another award notification would be difficult, due to the number of different organizations involved, time limitations, and the possibility that the student might not be able to come to the meeting to receive the award. For those reasons, FSD did not ask to be included this year, but may reinvestigate the possibility for 2018.

- Treasurer Report- Richard Mankin for Angela Foreman:

The treasurer report was presented. The 2016, \$1000 student grant was awarded to Heather Page at University of California San Diego, Scripps Institute of Oceanography. Dues and contributions of \$365 were received, leaving a balance of \$15,369.70 in the FSD account. Angela renewed the FSD Articles of Incorporation as a nonprofit corporation in Washington DC. The complete treasurer report is posted in the 2017 FSD Newsletter on the FSD Archives page, which can be accessed from <http://stemd.org>.

- Science Student Grant Committee Report 2017– Richard Mankin:

The Student Grant Committee (Angela Foreman, Imke Durre, Laureen Summers, and Richard Mankin) reviewed 7 applications (12 persons had submitted incomplete applications) for the 2017 Student Grant and selected Rachel Wiley, a PhD. student in the Institute of Molecular Medicine at the University of North Texas Health Sciences Center, Ft. Worth, TX, for “Typing highly degraded DNA using circularized molecules and target enrichment.”

#### New Business:

FSD submitted a letter of support to NSF for a proposal by Dr. Haddad at the University of California Santa Cruz entitled “NRT-INFIEWS: Sustainable Food Production in a Mediterranean Climate: Water and Energy Efficiency, An Applied Doctoral Training Program.” The proposal included strategies for improving the access of disabled students to facilities with complex piping.

Hal Frost sent us a report about a recent Harkin Disability Employment Summit:

[http://www.aucd.org/ecp/template/news.cfm?news\\_id=12360&parent=0&parent\\_title=homepage:%20whats%20new&url=/ecp/template/news\\_mgt.cfm?start%3D1%26sort%3Ddate%2520desc%2Ctitle%26type%3D406%26action%3D%26topic%3D86%26keyword%3D%26parent%3D0](http://www.aucd.org/ecp/template/news.cfm?news_id=12360&parent=0&parent_title=homepage:%20whats%20new&url=/ecp/template/news_mgt.cfm?start%3D1%26sort%3Ddate%2520desc%2Ctitle%26type%3D406%26action%3D%26topic%3D86%26keyword%3D%26parent%3D0)

A web search found this interesting commentary about the summit also:

<http://www.supportedemployment.ca/garth-johnson-harkin-summit-2016-coverage/>

There were several interesting posts recently on FaceBook. Here is one from a Twitter blogger: I am trying to increase representation of pwd. Any scientist with disability (ies) want to be highlighted? [#actuallylivingscientist](#)

There was a request by Janet Raloff –“I am the editor of Science News for Students, the teen sister publication to Science News (where I have also worked for most of the past four decades). This year we will be doing a two part series on diversity in science--and one of the two parts will focus on researchers who did not let a disability keep them out of STEM. I am hoping some of you will suggest sources for this story-- people who can articulate the type of work they do, the joy they derive from it.” Kathi Kowalski works for this publication and collected information for an article at the annual meeting. For links and more information, visit the FaceBook page or contact Richard.

Megan Lynch- "The Center for Oral History is currently seeking interviewees for a three-year project to document the lives and contributions of people with disabilities who work or are currently obtaining an advanced degree in STEM fields. To participate, please fill out our recruitment form."

FSD signed on to a multisociety letter on immigration from AAAS to President Trump. It emphasizes the importance international cooperation to science, and this importance particularly applies to persons with disabilities, many of whom face greater economic and social hardships than the general public. The letter is posted on the FSD archives page (Multisocietyletterimmigration2017.pdf)

It was suggested that FSD develop specific selection criteria for its graduate student grant and that these criteria be communicated to applicants. Imke Durre offered to share the criteria she developed while reviewing the 2017 applications.

Laureen Summers solicited input regarding her current efforts to find out what research exists regarding the effect of implicit bias on people with disabilities and the importance of one-on-one relationships in counteracting such biases. The group expressed its support of this effort.

- Adjournment:

The meeting adjourned at 11:45 AM. –Respectfully submitted by Richard Mankin, February 19, 2017.

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Treasurer Report for 2018 Annual meeting:

### Foundation For Science and Disability Treasurer Report

January 1, 2017-December 31, 2017

|                     | 2017-2018          | 2016-2017          |
|---------------------|--------------------|--------------------|
| <b>Assets:</b>      |                    |                    |
| Cash on Hand        | \$15,369.70        | \$16,004.70        |
| <b>Total Assets</b> | <b>\$15,369.70</b> | <b>\$16,004.70</b> |
| <b>Income:</b>      |                    |                    |
| Dues                | \$ 165.00          | \$ 230.00          |
| Contributions       | \$ 421.37          | \$ 135.00          |
| <b>Total Income</b> | <b>\$ 586.37</b>   | <b>\$ 365.00</b>   |

**Expenses:**

Student awards \$ 1,000 \$ 1,000.

**Total expenses \$ 1,000 \$ 1,000.****Net Income: \$ -413.63 \$ -635.00****Net Balance: \$14,956.07 \$15,369.70**



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**Foundation for Science  
and Disability**

<http://stemd.org>

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The Foundation for Science and Disability (<http://stemd.org>) was founded in 1978 to promote the integration of persons with disabilities into the mainstream of the scientific community. A major focus of FSD has been the removal of barriers that restrict opportunities to develop careers and conduct scientific research. The Foundation also provides grants to students with disabilities who are conducting research in the fields of Science, Technology, Engineering, or Mathematics.

President: Richard Mankin ([rmankin1@ufl.edu](mailto:rmankin1@ufl.edu))

Treasurer: Angela Lee Foreman ([angelaleeforeman@yahoo.com](mailto:angelaleeforeman@yahoo.com))

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**Foundation for Science and Disability 2018 Dues Notice  
Membership Application / Renewal Form**

Dues Schedule:

Student        \$5.00

Regular        \$25.00

Contribution \_\_\_\_\_

Total         \_\_\_\_\_

Please make checks out to:

Foundation for Science and Disability

and mail to:

Angela Lee Foreman

Foundation for Science and Disability

P. O. Box 3384

San Leandro, CA 94578

Please list a change of address, if any, and / or list any comments for the Board of Directors below. Also, please forward us your email address if you would like to receive pdfs of future Newsletters.

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