REPID Program
Research Education Program to Increase Diversity in Health Researchers

REPID’s first cohorts smile in the summer of 2012
ENCOURAGING DIVERSITY

Overview

The REPID Program, through support from The National Institutes of Health, and The National Heart, Lung and Blood Institute (NHI-NHLBI), provides a short term research training and enrichment experience for Michigan State University undergraduate/graduate/medical health professional students from underrepresented, minority, and disadvantaged (URMD) groups. The goal is to inspire these students to pursue health related research careers focused on cardiovascular, pulmonary and hematologic disciplines.

The REPID Program is designed to increase the number and diversity of researchers in health-related research by providing an inspiring and supportive environment for accomplishment and advancement. Our inspiration is to challenge the existing problem of diversity and health disparities in biomedical/clinical research and clinical practice, and to foster career development for motivated individuals from URMD students at Michigan State University.

Cover Design: by Sarah Crockett, B.A.
Background: An image of special staining of Hepatic Stellate Cells after treatment of mice with carbon tetrachloride, by 2013 REPID Scholar, Yingli He who did her research project with Dr. Bryan Copple.
Background Center Circle: An image of special staining (BrdU) for proliferating Crypt Epithelial Cells, by 2013 REPID Scholar, Melissa Chavez who worked on her research project with Dr. Mark Kadrofske.

Students listen while Dr. Elahé Crockett instructs them about tissue culturing and sterility techniques in the REPID training laboratory at the MSU Clinical Center.
Dr. Elahé Crockett is the director of REPID Program. She conceived, proposed and developed the program, after spending many years in the biomedical research field.

During that time, she trained more than 70 students in lab research. “Many of them are now established physicians and faculty,” she said. Through that experience, she noticed that some basic lab skills were missing— not only among students, but physicians and faculty as well. Coming from many different backgrounds all over the world, their diversity resulted in non-uniform base of knowledge and procedures.

Crockett had a vision to develop a course that would teach basics and methods in biomedical laboratory research, such as literature search, responsible conduct of research, safety regulations, how to prepare buffer solutions and reagents, how to pH them, how to cell culture, how to use a microscope, and how to record observations and present the data. “These are the very basics,” Crockett said, “If you go into a research laboratory and you are not familiar with the procedures, you will feel kind of intimidated.”

A main facet of REPID is to pair students with established researchers. “The selected mentors are not only excellent mentors, but they are also nationally recognized researchers— with grants and awards,” Crockett said. Mentors are particularly chosen based on how well their field of study is in tune with the NHLBI’s mission and each scholar’s research interest.

Crockett requires all REPID students to take the MED-492 course. “It really empowers students to feel comfortable and do the work,” Crockett said. Two years later, of the 36 scholars, 27 have jobs in scientific fields, or accepted into graduate or medical schools.

Crockett hopes the grant, which expires in 2017, will be extended. She is in the process of making the course into modules that can be offered globally, allowing students to get basic, standardized training, no matter where they reside.
I think REPID is a great program. By definition, it is trying to increase the number of minorities involved in research. We know that minority researchers are very few—less than ten percent at most universities. Any attempt at getting the young ones to be interested in research would be a great value to community and to the nation at large. With diversity, people are able to study different diseases that affect different populations.

The face of the United States of America is changing. By the year 2050 it is said that half the population will become one within a minority population. So if we are going to treat these people, represent their interests very well, there must be an increase in the number of minorities and diverse people, doing research that will affect a large portion [50%] of the population.

Researchers, as we know, are the ones that advance our knowledge in every area of their career endeavor. So I’m really pleased with [REPID] because it really gets the young ones of diverse populations engaged at an earlier time. It tends to stimulate their interests.

For example, Olomu recounts the experience of one of her mentees in 2012, Nallely Trejo, who was offered a position at CDC (Center for Disease Control and Prevention) after her participation in REPID. Now she is engaging in research that is affecting a lot of populations.

The second student that was sent to me [in 2012] remained in my research team after the program. She broadened her knowledge in research, and is now planning on going to medical school. She is interested in research that affects the minority population, because of the experiences she had gained from the program.

I think it’s been very effective. I am really happy that Dr. Crockett and Lindsay are doing such a great job with the program. They should keep it going.

“These young students are excited and they want to learn. They come in contact with real patients and real life situations.”

Dr. Adesuwa B. Olomu, M.D.
Robert Frisk is among the first generation in his family to go to college, and is the only one in seven generations to graduate.

“There are not many scientific jobs in Michigan’s Upper Peninsula,” Frisk said. Although he has a degree in Biochemistry, Molecular Biology and Biotechnology, the few related jobs at Northern Michigan University, and other similar institutions, are hard to come by—especially for someone without several years of lab experience.

Frisk was one of many in that regard. “Most labs want previous experience,” he said, “But how do you get previous experience?” That is the question REPID is helping students like him to answer. “It’s something I desperately needed but never got in college, and REPID gave me that doorway to walk through,” he said, “I’ve been trying to do the most with it.”

As a student among REPID’s second cohort in 2013, Frisk was matched up with a mentor. He worked in the research lab for diabetic retinopathy with Dr. Susanne Mohr, developing an assay for cyclic AMP. “I worked in a very focused lab,” he said, “I was given a lot of control over what I am doing.”

Mohr’s lab is one of many places Frisk has worked at. He spent many years, before and during college, working in the food service industry, or doing manual labor in copper mines or factories. “This is the first job I’ve had where I’m happy to get up and go to work in the morning,” Frisk said, “I like what I do, and I can’t wait to get my hands in it.”

In August 2013, Frisk accepted a job as a Production Chemist at Neogen Corporation in Lansing. “RPID put me into the best position that I had ever been in, in terms of my career,” Frisk said.

“Most labs want to see previous experience... REPID gave me that doorway to walk through.”

Robert Lawrence Frisk, B.S.
ENCOURAGING DIVERSITY

“REPID helped me get enthusiastic about what I’m signing my life up for.”

Hahyung Kim, B.S.

Hahyung Kim was among one of the first cohort of REPID in 2012. Her previous experience included work in the Mansfield lab, where she began in 2009 and continues to study enteric diseases, irritable bowel syndrome and Guillain Barre Syndrome.

The REPID program came at the perfect time for Kim, who wanted to continue biomedical research focusing on the lungs, blood and heart. The program gave her the stepping stone she needed to continue into higher education. “A stellar GPA and good background study aren’t everything, when it comes to applying to graduate programs,” she said.

Kim spent some time in Dr. Bryan Copple’s laboratory as a REPID scholar, and still talks to him often, more than a year later. “He will meet up to go over protocol, answer questions… it really makes the process of continuing research easier,” she said. Her relationship with Copple, as well as others connected through REPID, helped her in finding a job as well. “Jobs, especially on campus, aren’t always posted,” Kim said, so it is crucial to know those who can tip you off when positions open.

Kim’s exposure to high-level research scientists, who run labs while also treating patients, really solidified her desire to go into a research profession. “You get to see exactly what it’s all about,” she said, “Their career is what I see myself doing.”

Job shadowing at the Breslin Cancer Center, another avenue of opportunity opened by the REPID network, exposed Kim to realities about the field that she had been unaware of. “Some of these patients will die,” she said, explaining a doctor’s role in easing them through the process. “It’s not just about going to a lab and working with cells… when we do apply [the concept], these are the challenges we will face.”
Alexis Therman spent plenty of time in scientific studies before she heard about the REPID Program. While earning a Bachelor’s Degree of Science in Anthropology and interning in a lab at the University of Kansas, she had read many books and worked with cancer cells for long periods of time. She needed to change her setting.

“I like the idea of helping low-income and minority [people] to better understand their health,” she said, seeing physical degradation as compared to other populations. “I learned that I want to work in a more urban setting where there is the possibility of studying low-income patients.”

The program empowered Therman to feel capable. She said, “We were put in as the interns, and was given so much more power and respect than we anticipated.”

“REPID definitely opened my eyes to the inequality of health in our nation,” Therman said, “What can I do as an undergrad, as a medical student, or as a doctor to make it more level?” Specializing in Bioethics, Humanities and Society, Therman asks herself many tough questions. Looking from a patient’s perspective, she often wonders, “What can be done to improve care? How can you teach doctors and health providers to better understand patients? These are questions that need to be addressed,” she explains. “It was the research for sure that built these ideas.”

Therman is very open to possibilities in the future. As part of the African Student Union, she would love to visit East Africa, Tanzania or Kenya, to better understand how the people see life there. “As a doctor, I’d love travel to feed the anthropologist in me. It’s also a great way to travel.”

“Without REPID, I know I’d be a different student. It started momentum for me. REPID touched me in that way, to show, yes, I’m really capable of this.”
Learning about each other by
ENCOURAGING DIVERSITY

Kristina Savage and Lindsay Gluf at the Mid-SURE poster presentation session.

Violeta Nieves, Dr. Wong Song, Andie Lee Gonzalez, & Dr. Elahé Crockett at the Mid-SURE oral presentation session.

Above: 2013 REPID Cohort at the Mid-SURE symposium.
At the end of the program, all REPID Scholars presented their research data and findings at the 2013 Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE). This event provided an opportunity for the scholars to share their research work with their peers, faculty, and external audiences. Mid-SURE symposium is a MSU Undergraduate Research Initiative program that functions to increase opportunities for students to engage in research scholarship, and creative activity.

2013 Mid-SURE participant Paul Garza and his lab mate, Gabe Salmon (high school student), poses with their reports.

Mia Cook (2013 REPID Scholar) was awarded an internship during the fall semester of 2013 at the Children's Environmental Health Network in Washington DC. Her research mentor, Dr. Kenneth Rosenman assisted her in finding this internship. Mia is also a part of the MSU DC Study Away Internship Program. She often expresses her gratitude as a REPID Scholar, as this opportunity would not have been presented if it wasn't for the REPID program.
**Breslin Cancer Center Physician Shadowing**

REPID Scholars are given additional opportunities for those who are interested in becoming physicians.

“Physician Shadowing”
This course, offered by Dr. Anas Al-Janadi, Chief of Breslin Cancer Center and Dr. Elahé Crockett, REPID Program Director, is developed to give students an opportunity to learn about the physician life and responsibilities at work. Several REPID Scholars have taken this course and enjoyed the experience.

For more information, contact Lindsay Gluf at lindsay.gluf@hc.msu.edu

**REPID Highlight:**

Dr. Elahé Crockett’s innovative research program was presented at the 2012 Association of American Medical Colleges (AAMC) Annual National Meeting in San Francisco, November 4, 2012.

**REPID Scholars’ Notable Accomplishments**

August 2012 - Alba Leone Sanchez, Ph.D., accepted a position as an Instructor of Anatomy in the College of Veterinary Medicine.

August 2012 - Miquel Joaquin was accepted into Michigan State University College of Human Medicine Class of 2017.

November 2012 - Congratulations to Nallely Trejo. She accepted a new job with the State of Texas as a Public Health & Prevention Specialist in HIV Research.

January 2013 - Hahyung Kim was offered two permanent part-time positions on campus as a laboratory technician.

May 2013 - Congratulations to Rosa Torres. She has been named an awardee of the 2013 David S. Bruce Outstanding Undergraduate Abstract Award through The American Physiological Society at the 2013-Annual Experimental Biology Meeting, Boston, MA.

May 2013 - Congratulations to Jessica Hernandez. She was the first author for a research abstract accepted at the Annual Experimental Biology Meeting 2013 in Boston, MA.

July 2013 - Kimberly Obey, was accepted into Michigan State University College of Human Medicine Class of 2018.

July 2013 - Andie Lee Gonzalez’s abstract was selected to present at the The Food and Nutrition Conference and Expo 2013 in Houston, Texas in October 2013.

July 2013 - Indrea Joplin accepted a position as a Scribe at St. Joesph Mercy in Ann Arbor.
Discovering unknown strengths while
ENCOURAGING DIVERSITY

REPID Advisory Board
Chair: Adesuwa Olomu, M.D., Department of Medicine
Co-Chair: Estelle McGroarty, Ph.D., Assistant VP for Research and Graduate Studies
Elahé Crockett, Ph.D., M.S., Director of REPID Program, Dept. of Medicine

Members:
Margaret I. Aguwa, D.O., M.P.H., F.A.C.O.F.P., Associate Dean for Community Outreach and Clinical Research, College of Osteopathic Medicine
Jerry Caldwell, Ph.D., Director of the Charles DREW Scholar Program
Judith Brown Clarke, Ph.D., Diversity Director of BEACON: Center for the Study of Evolution in Action
James Galligan, Ph.D., Co-Chair of Dept. of Pharm/Tox, Director of the Neuroscience Program
Paulette Granberry Russell, J.D., Senior Advisor to the President for Diversity and Director, Office for Inclusion and Intercultural Initiatives
Houria I. Hassouna, M.D., B.Ch., Ph.D., Carl and Elsa Rehberg Research Professor, Professor of Medicine and Director of Special Coagulation Center
Karen Klompares, Ph.D., Dean of the Graduate School
Terry Viau, Ph.D., Associate Dean for Support Services, College of Nursing
Korine Wawrzynski, Ph.D., Director for Undergraduate Research

“In the summer 2012, I obtained a Bachelor of Science in Interdisciplinary Studies in Social Science with a Health Studies Concentration and a Cognate in Sociology, and I can proudly say that, while I significantly struggled to achieve this as my first career goal, determination and optimism were the most important assets for my success. I was also fortunate to have invaluable opportunities presented to me throughout my undergraduate education. One of these opportunities was to be involved in research as an undergraduate research assistant for several projects and later as a REPID scholar, where I was provided with health research training and prepared professionally to be successful within the health and medical fields. Particularly, the REPID Program’s research training and professional preparation opened one of the most important doors in my career, which was to obtain an offer for a fellowship position with Centers for Disease Control and Prevention, a federal agency that focuses on public health nationally and internationally. Although, I was unable to accept the position, it certainly got me one step closer to my dream job.”

- Nallely Trejo, B.S., September 2012

Update: Nallely Trejo, B.A. accepted a position in November 2012 as a Public Health & Prevention Specialist in HIV Research for the State of Texas in Austin, Texas.
Beginning new careers through ENCOURAGING DIVERSITY

2012 REPID Scholars & Mentors

Shanice Akoto
Major: Human Bio
Mentor: Dr. M. Kadrofske
(Ped Dept)

Mohamed Askar
Major: Biochem & Mol Bio
Mentor: Dr. J. Busik
(Physiology Dept)

Danuelle Calloway
Major: Human Bio
Mentor: Dr. C. Holzman
(Epi & Biostat Dept)

Anthony Ferrantelli
Major: Human Bio
Mentor: Dr. A. Dorrance
(Pharm & Tox Dept)

Miguel Joaquin, B.S.
Major: Biomed Lab Sc
Mentor: Dr. S. Mohr
(Physiology Dept)

Mustaf Jeylani
Major: Biomed Lab Sc
Mentor: Dr. L. McCabe
(Physiology Dept)

Hahyung Kim, B.S.
Major: Genomics and Molecular Genetics
Mentor: Dr. B. Copple
(Pharm & Tox Dept)

Alba Sanchez Leone,
D.V.M., M.S., Ph.D.
Major: Lifelong Ed Stu
Mentor: Dr. S. Mohan-Kumar
(Pharm & Tox/Vet Med)

Omar Taher
Major: Human Bio
Mentor: Dr. J. LaPres
(Molecular Bio Dept)

Alexis Therman, B.S.
Major: Anthropology
Mentor: Dr. A. Olomu
(Medicine Dept)

Rosa Torres
Major: Medical Tech
Mentor: Dr. S. Watts
(Pharm & Tox Dept)

Nallely Trejo
Major: IDS- Social Science
Mentor: Dr. A. Olomu
(Medicine Dept)
Solidifying foundations by ENCOURAGING DIVERSITY

Andie Lee Gonzalez, MPH
Major: MS in Public Health
Mentor: Dr. W. Song
(Food Sc & Nutrition)

Jessica Hernandez
Major: Biomed Lab Sc
Mentor: Dr. J. Galligan
(Pharm & Tox Dept)

Ijeoma Nnanabu, B.S.
Major: Human Bio
Mentor: Dr. N. Paneth
(Epi & Biostat Dept)

Kimberly Obey
Major: Genomics & Mol Gen
Mentor: Dr. N. Parameswaren
(Physiology Dept)

Neco Wilson
Major: Biochem & Mol Bio/ Biotech
Mentor: Dr. K. Gallo
(Physiology Dept)

REPID 2012-2013 Statistics:

Scholar Breakdown

35 Scholars
31 Undergraduates
1 Master’s in Public Health
2 Lifelong Education
1 Veterinary Medicine
1 Osteopathic Medicine

Short-Term Results

16 Scholars were offered continued research positions in MSU laboratories
2 Scholars were accepted into the College of Human Medicine (CHM) Medical School
1 Scholar was accepted into the MSU College of Osteopathic Medicine
1 Scholar accepted an MSU Dietetics Internship
2 Scholars accepted positions with local hospitals
1 Scholar accepted a position with the Texas Health Dept.
1 Scholar received an internship at the Children’s Environmental Health Network in Washington D.C.
1 Scholar accepted a position at a Bio tech company
3 Scholars accepted positions in Health-related areas

I am so glad that the REPID program started at MSU. This is an amazing program and I am very lucky to have had the opportunity to participate.

Thanks so much!

-Kimberly Obey,
Aug 2012

Scholar & Mentor Teams
Investing in youthful resources by
ENCOURAGING DIVERSITY

2013 REPID Scholars & Mentors

Rolando Barajas
Major: Human Bio
Mentor: Dr. N. Parameswaran
(Ped Dept)

Melissa Chavez
Major: Human Bio
Mentor: Dr. M. Kadrofske
(Ped Dept)

Brittany Childs
Major: Physiology
Mentor: Dr. N. Parameswaran
(Physiology Dept)

Cierra Coe
Major: Microbio
Mentor: Dr. W. Song
(Food Sci & Nutrition)

Paul Garza, B.S.
Major: Biomed Lab Sc
Mentors: Dr. J. Busik &
Dr. D. Proshlyakov
(Physio & Chem Dept)

Brian Harvey
Major: Physiology
Mentor: Dr. C. Rockwell
(Pharm & Tox Dept)

Yingli He
Major: Nutritional Sc
Mentor: Dr. B. Copple
(Pharm & Tox Dept)

Kyrah Holland
Major: Kinesiology
Mentor: Dr. A. Olomu
(Medicine Dept)

Mary Lian
Major: Nutritional Sc
Mentor: Dr. J. Galligan
(Pharm & Tox Dept)

Audrey Meredith
Major: Human Bio
Mentor: Dr. Sheba MohanKumar & Dr. PS MohanKumar
(Pathobio & Diagnostic)

Huei-min Ni, B.S.
Major: Family Comm
Services
Mentor: Dr. C. Holzman
(Epi & Biostatistics)

Violeta Nieves
Major: Dietetics
Mentor: Dr. W. Song
(Food Sci & Nutrition)
Mia Cook
Major: IDS - Health & Soc
Mentor: Dr. K. Rosenman & M. Milerick-MaY (Medicine Dept.)

Robert Frisk, B.S.
Major: Biochem & Mole Biol
Mentor: Dr. S. Mohr (Physiology Dept.)

Indrea Joplin
Major:IDS - Health & Society
Mentor: Dr. A. Olomu (Medicine Dept)

Angel Trevino
Major: Pre-Medical
Mentor: Dr. J. Harkema (Pathobio & Diagnostic)

The REPID program has been, without a doubt, a highlight in my medical school training. The skills gained throughout the course of the program will serve as foundational stepping stones to a life-long pursuit of clinical research from a comprehensive, scientific, unbiased perspective.

The REPID program is an exceptional forward-thinking program that will serve as a catalyst to change the face of the research community by empowering minority researchers with the tools needed to conduct evidence-based scientific research.

Dr. Crockett, is honest, sincere, and has a profound interest in sharing her research knowledge with students. Her energy and enthusiasm will resonate in the hearts of her students for many years to come.

-Nashwa Khogali, D.O., Aug 2013

Kristina Savage
Major: Human Bio
Mentor: Dr. A. Dorrance (Pharm & Tox Dept)

I am excited to continue with research and to build upon the skills that I have learned as a result of REPID program. I am anxious to continue my learning, and to look forward to gaining new experience.

I am thankful to have been a part of this program, and I consider myself lucky to be able to call myself a REPID scholar!

-Kristina Savage, Aug 2013

This research experience has been an incredible journey as I learned and gained many valuable experience and knowledge. As an undergraduate, it is very difficult to be given an opportunity to do research with professors and doctors at MSU, but REPID made it possible, and I am very grateful for that.

-Huei-min Ni, B.S., Aug 2013
Rushing through the swirling stream of life we study the nature of what we are. Our persistent study of life is more than whimsical curiosity. For countless generations we try to keep the little flame of life burning in ourselves and those around us. And for generations to come we will never stop trying to keep the flame burning because we are alive, we are a part of life.

Light, Life and Time

October 15, 2013

Deadline for Submission of Applications

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