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Project L/EARN

Enlarging the pipeline of health researchers from underrepresented groups through an internship model

INTRODUCTION

Project L/EARN ("Learn While You Earn") is an intensive 10-week summer internship in health-focused social science research for undergraduate students from groups underrepresented in research. The program provides full-time instruction in research writing, research methods, statistics, and other topics, as well as one-on-one faculty mentoring and guidance in a full-fledged research project. Interns receive a financial stipend and three academic credits as well as room and board during the program.

Since 1991, Project L/EARN has operated out of the Rutgers University Institute for Health, Health Care Policy and Aging Research.

In 2008, after 10 years of funding by the National Institute of Mental Health (NIMH) ended, the Robert Wood Johnson Foundation (RWJF) awarded $2,957,826 to the institute to support Project L/EARN for 68 months ending in May 2014. From the program's inception through the end of NIMH funding, some 127 Project L/EARN students had completed college, and about two-thirds of them went on to pursue graduate degrees.

Project L/EARN is managed at Rutgers by Faculty Director Jane E. Miller, PhD,[1] and Program Director Diane Davis,[2] RWJF Assistant Vice President for Research and Evaluation Debra J. Perez, PhD, MA, MPA, is the assistant vice president of Research and Evaluation at the Foundation.

See the Appendix for a list of individuals interviewed for this report.

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[1] Miller is research [1]professor at the Institute for Health, Health Care Policy and Aging Research, and a professor in the Edward J. Bloustein School of Planning and Public Policy at Rutgers University.

[2] Davis is associate director of research computing at the Institute for Health, Health Care Policy and Aging Research at Rutgers University.

WHAT IS PROJECT L/EARN ABOUT?

Prior to receiving funding from RWJF in 2008, Project L/EARN had a long track record of developing young researchers and supporting them in their undergraduate years and in their application to graduate school. According to former Faculty Director Peter Guarnaccia, PhD,[3] the program had evolved to encompass an intensive 10-week summer program of coursework and research with a faculty mentor, along with developmental activities that included attending a professional conference. A solid funding base allowed for a stipend during the academic year so students could continue their research after the summer program ended and they were back in school. "That is when they typically start to refine their project into a publishable paper," Guarnaccia says.

With NIMH funding ending, David Mechanic, PhD, director of the Institute for Health, Health Care Policy and Aging Research at Rutgers University, approached RWJF with this model in place. Mechanic notes that the process of turning inexperienced undergraduates into seasoned researchers is a "long pipeline." He points out that "many of these kids come from families that have no college experience and don't understand how university pipelines and graduate schools work. So they need a lot of mentoring—and when they get it, they do very well."

Mechanic describes the program as "an intensive care model" that requires a significant investment in a relatively small group of students, but one with a "very high rate of success." Project L/EARN was attractive to RWJF's Human Capital team, according to Perez, as a proven program that could provide "a pipeline of diverse future scholars" for RWJF programs such as *New Connections*[3] and the *Evaluation Fellowship Program*.[4] It also has the goal of infusing health services research with the perspective of people from groups that have traditionally not had input into research and policy formation.

"We want to expand the pipeline of strong candidates by giving these undergraduates a solid foundation and opportunities to be involved in research, get a good view of the issues, and speak with key researchers and policy-makers as they go through college and in their early career development," Davis says. Project L/EARN also informs students about the opportunities in health research and helps them prepare for and pursue those opportunities, about which many know little.

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[3] Guarnaccia is professor, department of human ecology, Institute for Health, Health Care Policy and Aging Research at Rutgers University.

[3] *New Connections: Increasing Diversity of RWJF Programming* aims to expand the diversity of perspectives that inform RWJF program strategy and introduce new researchers and scholars to the Foundation.

[4] The *Evaluation Fellowship Program* seeks to increase the presence and influence of underrepresented groups in the evaluation field.

The RWJF funding introduced several changes in project focus, according to Faculty Director Miller:

- A broadening of the definition of "underrepresented groups" to include not only racial and ethnic minorities but also first-generation college students and those from low-income backgrounds
- Active recruitment of nursing students. One to three positions each year are now designated for nursing students or pre-nursing students who are planning a BSN upon completion of their first bachelor's degree.
- Inclusion of a social network analysis[5] that explores the networks Project L/EARN interns use after they complete the program to investigate graduate schools and postbaccalaureate research and policy positions
- Creation of a comprehensive tracking and evaluation database and reports about the graduate education, research, and other professional accomplishments of alumni
- Development of materials and workshop presentations to teach the Project L/EARN model to research-active faculty at other universities who are interested in establishing similar programs on their campuses

HOW DOES PROJECT L/EARN WORK?

Project L/EARN is fundamentally different in structure and curriculum from many summer training programs or research internships, according to Miller. Other programs match the student with a faculty member who typically meets with the student for a few hours each week, while the student spends much of his/her time working in a computer lab or doing research in the library. There may be one or two weekly group-based professional development activities.

In contrast, says Miller, "Project L/EARN interns are in class eight hours a day, five days a week for 10 weeks getting a very structured curriculum that, in many ways, is comparable to the first year of graduate school. They learn statistics, research methods, research writing, and attend guest lectures structured in a graduate seminar format. They are getting almost the equivalent of four courses during the summer."

The coursework supports the interns' research, emphasizes Davis. "With their mentor, they are concentrating on their topic and how to apply the methods they are learning to their project. They also focus on analysis, literature review, and how their question fits into the world of research that their mentor is involved in year-round. The coursework

[5] RWJF staff describes social network analysis as examining the "relationships between individuals and groups and mapping these relationships and assessing their patterns. The resulting map provides a unique picture of how network participants are communicating and behaving."

allows their relationship with their mentor to develop on a much higher plane with respect to professional research. It's been called 'research boot camp.'"

There are lessons that go beyond textbooks. "We want them to see how to manage their time, how to handle pressure," says Miller. "This is where we want them to have their first crisis of confidence (regarding academics), while they're surrounded by a lot of support."

The interns are there to be challenged and to grow and develop into experts on an issue they care about. This includes experiencing what it's *really like* to write research papers, says Davis. "They need to understand that they will get a lot of feedback and will revise the paper many times before it is publishable in a peer-reviewed journal," she stresses, "and that this is to make it better and that real researchers get revisions all the time too. We want them to go through that here, where we can support them through it. Too many kids leave graduate school because they think it was a mistake that they were accepted. We want them to know that they are supposed to be challenged."

The development of a support network is key to the success of Project L/EARN interns. "We are here for them after the summer, through the remainder of their undergraduate experience, through any post-baccalaureate positions, and when applying to graduate school. An alumni network of others who have gone through the same kinds of things is there for them also, so there is not the feeling of 'loneliness/onlyness' that can kill an educational trajectory," says Davis.

Project L/EARN instructors are almost all alumni and the most senior instructors have been teaching for the program for nine or 10 years. Alums connect with the program in other ways as well. For example, one former intern returns every summer to present a networking workshop before the professional conference.

Project L/EARN is open to undergraduates entering their sophomore, junior, or senior year at any U.S. university. Potential applicants and faculty who might recommend the program learn about it from internship websites, the RWJF website, mailings, and a network of faculty contacts gathered from mentors who have participated over the years. Advertisements in nursing newsletters specifically target nursing students. Interest in Project L/EARN is high: the program offers 10 slots for interns each summer, and is able to accept only about one out of every eight applicants.

WHAT HAS HAPPENED SO FAR?

Project L/EARN's accomplishments can be seen in the educational and career trajectories of its alumni and the network of relationships they forge.

Diverse Paths to Graduate School

In the fall of 2012, 12 recent Project L/EARN alumni will be starting some sort of graduate program, including master's degrees, doctorates, and one postdoctoral fellowship. "The track record continues to be really good," says Project Director Miller, with nearly 50 doctoral and 80 master's degrees earned or in progress among alumni.

Over time, the value of post baccalaureate work experience between college and graduate school has become apparent. Miller points out that, while heading to graduate school right after college works for many students, taking a research, clinical, or policy position for a few years can be beneficial "for the ones who aren't sure what they want to do, or want to go into a field that values having clinical experience or some research experience already." As a result, Project L/EARN alumni follow a "diversity of paths to graduate school," she says, "so evaluating where they are in the year right after college isn't necessarily the way to look at it. We are seeing success among our alumni, but we are seeing that it can take somebody two or three years after college graduation to go to graduate school. Over another eight or 10 years, they will earn a master's degree, perhaps work for a bit, get a PhD, and then do a post-doc."

Project L/EARN seeks to keep its recent alumni involved in academic research. Over the 2011–2012 academic year, at least nine alums still in college have gone to a research conference to present their work jointly with their faculty mentor. "When they apply to graduate school they will be able to demonstrate their research capabilities with real credentials," says Miller.

The emphasis on nursing student recruitment has yielded very successful nursing interns, who "fit extremely well in the Project L/EARN cohort," says Miller. Project L/EARN staff matches the nursing interns with faculty mentors who are able to offer research that fits their nursing interests. "We also try to include some nursing faculty—nurses who are researchers—in our mentor pool," says Davis, "so the nursing interns have the opportunity to work on research with them."

The Social Network Analysis

The social network analysis of Project L/EARN is proceeding in two phases. The first cross-sectional social network analysis focused on students participating from 2006 to 2009. This analysis identified the broad range of advising the interns and former interns receive both during and after their summer on topics that include:

- Deciding whether to pursue a post baccalaureate experience before graduate school
- How to look for graduate schools in one's area of interest
- Writing the application essay

- Getting letters of recommendation
- Overall social support and encouragement.

The mentoring relationship with the Project L/EARN mentor appears to be stronger and more multidimensional than it is with other mentors such as a professor in the student's major. "We think that kind of enrichment is important, partly because of the topics but also because it shows that interns and alumni have a very close relationship with their Project L/EARN mentor," according to Miller.

Davis believes that Project L/EARN interns, at a very early stage of their careers, "have much richer advising networks than you would expect to see for an undergraduate student."

The second phase of the social network analysis is a four-year prospective study of advising networks of Project L/EARN alumni. Starting with the 2010 cohort and through the 2013 cohort, each group of interns completes a survey about their advising networks (number of advisers, who they are, what topics they discussed) before the summer program and one year and two years later. The study addresses questions such as:

- Once students graduate, do they lose advisers? Are they picking up different advisers over time?
- Are there certain advisers who stick with the students? If so, are the Project L/EARN advisers the ones who stick with them?
- Do the topics about which they receive advising change as they progress from their last years of college to post-baccalaureate activities to early graduate school?

Participant Reflections on the Experience

All this effort pays off, according to program alumni:

- "To this day, everything I do is a reflection of the skills and the knowledge I obtained from the Project L/EARN summer," says Nicole DePasquale,[6] from the 2009 cohort. "I met people who I still email for advice and guidance. When I went to graduate school at Johns Hopkins I took binders filled with all the handouts and presentations from the summer and that material got me through graduate school. Overall Project L/EARN affirmed for me that graduate school was definitely the right step and that I was made to have a career in health-oriented research."

[6] DePasquale received her MSPH degree in health education and health communication from Johns Hopkins Bloomberg School of Public Health in December 2011 and begins a PhD program in human development and family studies at Pennsylvania State University in fall 2012. Read a profile of DePasquale.

- "I felt that if I could make it through Project L/EARN I could make it through anything in life," says Dany Fanfan[7] from the 2010 cohort. "It was a great motivator when nursing school was overwhelming—I would remember that I did more in Project L/EARN."
- "Project L/EARN definitely made me stand out in the applicant pool for graduate school at Washington University," says Karen Hidalgo[8], from the 2009 cohort. "It is such a competitive school and I had no international study abroad experience. But I had been so exposed to the whole research process and had a paper completed, even though it wasn't published."

Read brief descriptions from other Project L/EARN alumni on the RWJF website.

WHAT ARE THE CHALLENGES?

Expanding the Applicant Pool

Attracting nursing students has proved challenging due to the clinical demands of the undergraduate nursing curriculum. "We encounter students thinking they should be getting clinical experience," says Miller, "and they don't want to dedicate their sophomore or junior summer to 10 weeks of research training that they see as taking them away from what they think they need. Getting them to understand that this is a good activity for them to undertake during their undergraduate training is one of the big challenges."

The timing is particularly tricky for nursing students, Davis notes, because the summers after sophomore or junior years (the appropriate ones for Project L/EARN) are also the summers when nursing students tend to do their clinical work. "It is a timing issue as well as a need to convince them of the value of the program." Davis suggests that a program geared specifically to nursing students, perhaps operated by a nursing school, could organize the L/EARN coursework to fit within the nurse training cycle.

In some years, it has been difficult to recruit a large enough pool of nursing applicants to fill even one or two positions. But, says Miller, "the ones we have accepted and trained have really valued the program and their nursing mentors have valued the program as well."

A minor challenge has been attracting applicants from economics and political science. Most applicants are from fields that are more directly health-related, such as psychology, public health, or pre-med. The program would like to include some students from other

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[7] Fanfan received her BSN degree from Florida International University in May 2012 and begins a PhD program in nursing at the University of South Florida in fall 2012. Read a profile of Fanfan.

[8] Hidalgo will complete her dual MSW/MPH degrees at Washington University in St. Louis in spring 2013. Read a profile of Hidalgo.

fields. “We like to have cohorts that are diverse in terms of major because they learn a lot from one another,” Miller says.

Sustaining the Program

The biggest challenge facing Project L/EARN is long-term funding. Continually developing the program so that it will draw future funders “keeps us on our toes,” Davis admits, “but it requires an energy that could be spent on the program in other ways.”

Former Faculty Director Guarnaccia points out that many funders do not want to just sustain programs that others have started. Yet, he believes that “the program is the right size and the curriculum is firmly established and works well.” Mechanic agrees: “Every faculty member, every post-doc, every guest speaker we’ve had come in, who gets to know the program well, makes the same comment: ‘I wish there was something like this when I was getting ready for graduate school.’”

WHAT DOES THE FUTURE HOLD?

During the last two years of the RWJF grant, program staff will develop materials and conduct workshops to disseminate the Project L/EARN model to other universities. “One way to get larger numbers is to have it occur in lots of different places,” says Mechanic. Although he points out that the model cannot simply be copied and that faculty and program leaders must be committed to the program, he also notes that other institutions “have the advantage of learning from what we’ve learned. They don’t have to start from scratch, as we did.”

In presenting to Rutgers STEM (science/technology/engineering/math) faculty about Project L/EARN Davis found that the model “transcends disciplines. The core issues that we have found make it a successful program are of value even though some components may need some revision if the model is used in nursing or STEM fields. This point will influence our development of the workshops.”

RWJF’s Perez and Program Associate Catherine J. Malone, MBA, support the national spread of Project L/EARN. “This is a great model for others to replicate,” says Malone. Perez agrees that “this is a great program that should be replicated all over the country. This is what is needed to get underrepresented kids to envision themselves in a career in academia or medicine.” But, she says, “these programs should be institutionalized—RWJF cannot host a program like this in every college.”

Program leaders continue to develop linkages with other human capital programs. “We are creating the pipeline to help other programs meet their diversity targets,” says Miller. “We are generating a pool of extremely smart, well-trained people. If you have a doctoral

program or a postdoctoral program or a mid-career training program, our alumni are the kind of people you are looking for."

After all these years, says Guarnaccia, "We are not only making a difference in individual lives, we have graduated enough students so that we are now making a difference in the field."

Prepared by: Mary B. Geisz
Reviewed by: Mary Nakashian and Karyn Feiden
Program Officers: Lori Melichar and Debra Perez
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APPENDIX

Progress Report Interviewees

Diane Davis
Program Director, Project L/EARN
Associate Director of Research Computing
Institute for Health, Health Care Policy and Aging Research
Rutgers University
New Brunswick, N.J.

Nicole DePasquale, MSPH
As of May 2012:
Research Assistant
Welch Center for Prevention, Epidemiology and Clinical Research
Johns Hopkins University Bloomberg School of Public Health
Baltimore, Md.
As of Fall 2012:
Doctoral Student, Human Development and Family Studies
College of Health and Human Development
Pennsylvania State University
College Park, Pa.

Dany Fanfan, BSN
As of May 2012:
Graduating Senior
Florida International University
Miami, Fla.
As of Fall 2012:
Doctoral Student, Nursing
College of Nursing
University of South Florida
Tampa, Fla.

Peter Guarnaccia, PhD
Professor, Department of Human Ecology
Institute for Health, Health Care Policy and Aging Research
Rutgers University
New Brunswick, N.J.

Karen Hildago, BS
Graduate Student, Public Health and Social Work
MPH/MSW Dual Degree Program
Washington University in St. Louis
St. Louis, Mo.

Catherine J. Malone, MBA
Program Associate
Robert Wood Johnson Foundation
Princeton, N.J.

David Mechanic, PhD
Director
Institute for Health, Health Care Policy and Aging Research
Rutgers University
New Brunswick, Fla.

Jane E. Miller, PhD
Faculty Director, Project L/EARN
Research Professor
Institute for Health, Health Care Policy and Aging Research
Professor
Edward J. Bloustein School of Planning and Public Policy
Rutgers University
New Brunswick, N.J.

Debra J. Perez, PhD, MA, MPA
Assistant Vice President for Research and Evaluation
Robert Wood Johnson Foundation
Princeton, N.J.

PROFILE LIST

- **Nicole DePasquale, MSPH**
- **Dany Fanfan, BSN**
- **Karen Hidalgo, BS**