

QUARTZ *at* WORK

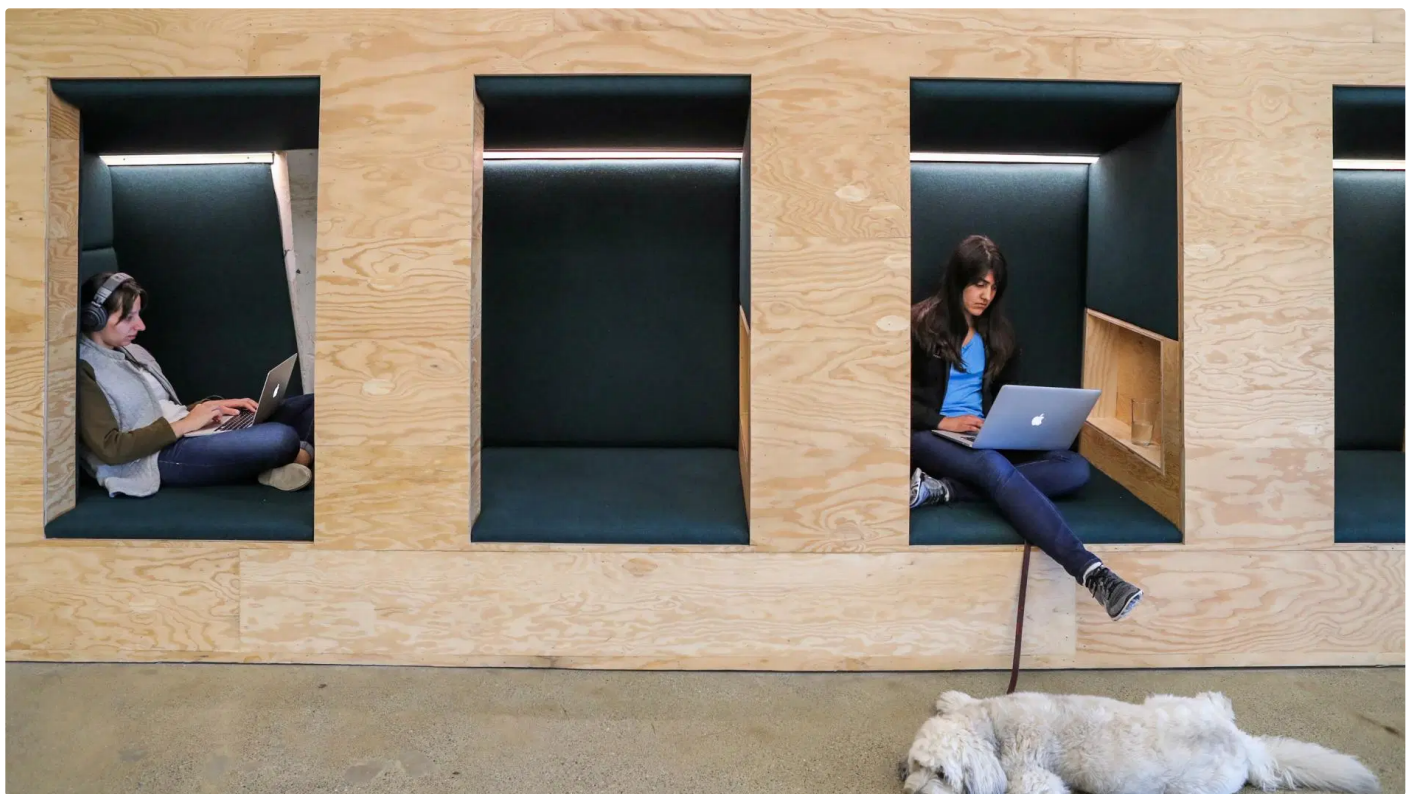
How We'll Win in 2019

Women and their allies are taking bold steps towards achieving gender equality in the workplace. Here's how they're moving us forward.

PROGRAMMED FOR SUCCESS

How R-Ladies made data science inclusive

By Dan Kopf in Toulouse, France • July 24, 2019



REUTERS/GABRIELLE LURIE

The Meetup group has made data science more inclusive.

In 2012, Gabriela de Queiroz had just moved from Rio De Janeiro to San Francisco to start graduate school in statistics. Looking for things to do, Queiroz discovered Meetup, a website for finding groups of people with similar interests.

Quieroz mostly attended Meetups about data science. She loved it. “It was a really good deal,” Quieroz said. “Free

You have 2 free stories remaining this month.



knowledge and a free meal.” (Many Meetups provide food to attendees.)

She soon felt the need to give back by starting her own group. She knew a number of programming languages, and was particularly proficient in the language R, generally used for statistical analysis. There were already Meetups about R in San Francisco. Quieroz had an idea for something different: An R Meetup just for women.

“Even though I was learning a lot from [other Meetups], I didn’t feel part of the community. I wanted to create an environment that was safe, welcoming, and judgment-free.” said Quieroz. “A place where more of the other participants looked like me.” Inspired by the group PyLadies, an existing Meetup for women programming in Python, Quieroz created R-Ladies.

Over the next seven years, her group would go a long way to making R and data science more inclusive. Today, R-Ladies has more than 50,000 members, with 165 groups in 47 countries. Nearly everyone I have spoken to in the R community credits R-Ladies for increasing the number of women who use the language, as well as making the community more comfortable for women and other gender minorities (R-Ladies welcomes all those who don’t identify as men).

The data-science gender gap

Data science is dominated by men. Only about 15-25% of data scientists are women, and a 2017 survey found that just 14% of R users are women. That 14% share is actually unusually high for a programming language. A 2016 analysis

contributors than projects using Javascript and Python (Github is a code-sharing platform for programmers).

R, Python and Javascript are free, open-source languages. That means anyone can use the language, add improvements and participate in its governance. Yet these programming communities tend to take on male-driven cultural norms. Guido van Rossum, creator of Python, has spoken about how this leads to unconscious biases against women, as well as outright sexism. Researchers have found that women are often assumed to be worse programmers.

R-Ladies is intended to serve as a corrective to that culture. R-Ladies events, like most tech Meetups, are typically tutorials or workshops. At a recent one in Seattle, the group got together for a workshop on “Shiny” —a tool for using R to make interactive dashboards. Many groups also have social events, where attendees can get to know each other and talk about their experiences as women in data science.

At this year’s useR! conference in Toulouse, France, I interviewed about a dozen women about their experience with R-Ladies. Nearly all described their group as refreshingly supportive, a place untinged by one-upmanship. “Sometimes when you are the only woman in the room, it can be very intimidating,” said Irene Steves, an ecologist and R user who lives in Tel Aviv, Israel. “R-Ladies was a really encouraging environment. It felt so nice to not feel unusual” in a programming space.

Beatriz Milz, a co-organizer of the R-Ladies Meetup in São Paulo, Brazil, described going to predominately male Meetups where she felt uncomfortable asking questions. Her R-Ladies experience has been the exact opposite. It as a place where no

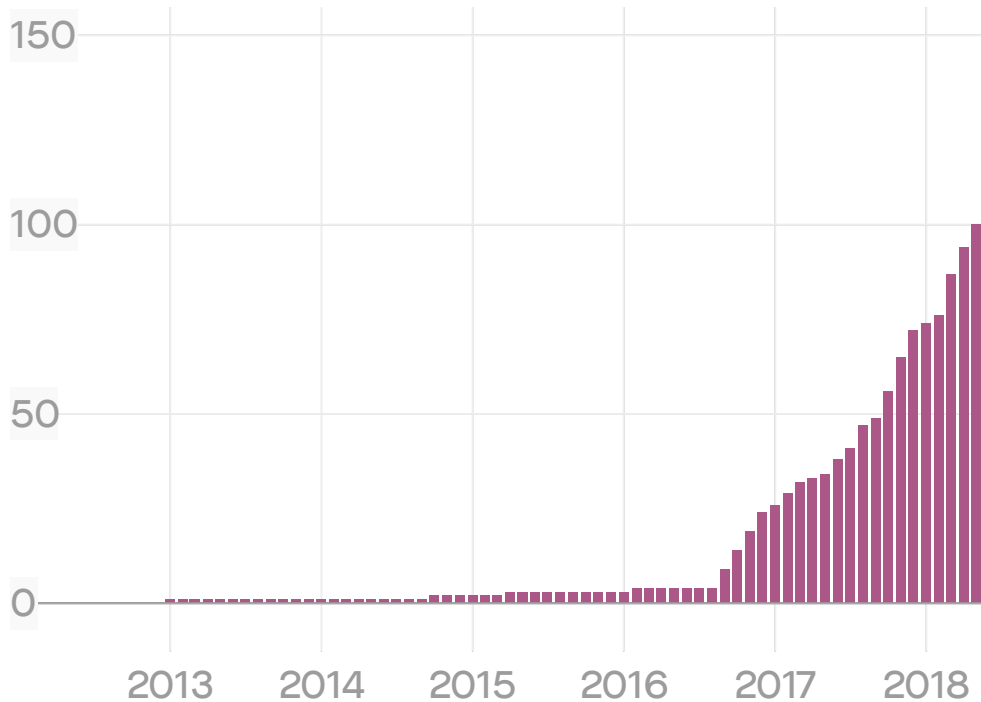
How to create an international programming success

R-Ladies took off slowly. The San Francisco Meetup became popular quickly, but by 2016, there were only three additional chapters, in Taipei, Minneapolis and London.

At useR! in 2016, organizers of the San Francisco and London chapters decided it was time to expand. They were awarded a grant from the R-Consortium, a nonprofit that encourages R use, to develop a plan to create a global brand and promote new chapters.

It worked. The number of groups exploded from four in August 2016, to 72 groups by the end of 2017, and 165 today. R-Ladies is truly global. About 33% of members are in North America, 33% in Europe, 20% in Latin America, and another 14% of members in Africa and Asia. Most groups hold events monthly and have hundreds of members. (Many groups cannot find free meeting spaces large enough to accommodate all those who want to attend.)

Total active R-Ladies Meetup groups globally



△ T L △ S Data: Meetup

Share

Quieroz said it was all about getting organized. The R-Ladies offer on-boarding and starter kits for those who want create new groups. They also have resources and support for those who are having difficulties. Without that support, she thinks a lot of prospective leaders would have quit before their group took off. She also points to funding support from the R-Consortium, which pays the Meetup fees for each R-Ladies group, which now amounts to \$30,000 a year. (Quieroz said they would rather use a free service, but Meetup serves as useful marketing since women attending other tech Meetups are likely to be prompted by Meetup's algorithm to view R-Ladies events.)

Making progress on diversity

This year's useR! conference did not feel like a male-dominated event. Three of the six keynote speakers were

According to the event's organizers, women made up 34% of attendees, up from 28% in 2016. Very few panels were all male, and a number were majority women.

R's relatively strong female representation for a programming language is largely because it is popular in the social sciences and earth sciences, subject areas where women are more likely obtain degrees than in computer science. R is not much used by computer scientists because it was developed specifically for statistics, not as a general-purpose programming language, like Python or Ruby. This gives R a leg up in terms of gender diversity.

Still, many long-term R users believe R-Ladies accelerated the increased representation of women. David Smith, who blogs about R and has been an active R user more than three decades, told Quartz he credits R-Ladies for making the environment not just better for women, but for all minorities who might consider using R. The community is more culturally sensitive as a result of the issues that the emergence of R-Ladies has demonstrated.

Hadley Wickham, R's most renowned tool developer, agrees. Wickham told me he was impressed by the improved gender diversity he has seen in R over the past several years. He sees R-Ladies as the driver of this change.

Not quite there yet on gender

Quiroz was recently appointed to the 37-member General Assembly of the R Foundation, the language's governing body. She is one of only six women. The next step for improving gender diversity, according to Quiroz, is having more women in leadership positions. She also hopes to see a

R by developing packages (plugins that make R easier to use). The most popular R packages are almost entirely developed by men.

R-Ladies recently organized itself as a nonprofit, which should allow it to expand its activities. Quiroz says the organization hopes to organize a conference, and support the development of more groups in poorer countries.

If R-Ladies has its way, R might just become the first programming language without a gender gap.