R-Ladies Alignment and Global Expansion

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Joint Proposal from the San Francisco & London R-Ladies user groups

The Problem

The R community suffers from an underrepresentation of women in every role and area of participation, whether as leaders, package developers, conference speakers, conference participants, educators, or users. The R community needs to promote the growth of this major untapped demographic by pro-actively supporting women to fulfill their potential, thus enabling and achieving greater participation. This proposal therefore seeks to provision dedicated mentoring, resources, and support for female programmers, in order to facilitate and advance their progress as R users, developers, and community leaders.

The R Foundation Women in R Taskforce presented recent statistics at useR! 2016 on the gender balance in the R community (www.rpubs.com/hturner/useR2016). 11% of CRAN package maintainers are women. Proportions of women participating in useR! 2016 ranged from 19% for speakers, to 30% for attendees. The recommended goals for the representation of women set by the Taskforce are 30-40% for the user community, and at least 20% for the developer community. There is, therefore, currently a gap of at least 10% between the current and potential representation of women.

This underrepresentation of women in the R community is cause for concern for two critical reasons. Firstly, the partial female participation represents a detrimental underutilisation of human resources, which therefore imposes an on-going constraint, of corresponding size, on the overall progress that can be achieved developing R and pushing the boundaries of this technology. Secondly, there is significant accumulating economic loss from the fact that R, a valuable technology, is not being fully utilised, again due to the gap between the current and potential representation of women in the R community.

The fact, therefore, that under conditions not encouraging for female R programmers women are unable to maximise their contribution to R technological advancement or their adoption of this technology to derive full value represents a serious issue affecting both the R community and beyond.

There is evidence from studies and other tech communities that similar female participation issues can start to be addressed through mentorship which encourages tangible improvements in relevant measures of success.

For example, McGrath Cohoon and Raoking (2013) report an increase in self-rated career management knowledge, use, and confidence for women in computer science and engineering after participating in a professional development workshop which includes group and brief individual mentoring. Nolan (1992) also stresses the importance of mentoring opportunities for women in statistics.

Additionally, the PyCon diversity committee recently reported large gains in the representation of women at the PyCon conference, starting from just 1% in 2011 through 15% in 2013 to 40% in 2016. The Chair attributed this to "year-round investments in a supportive accessible community; sustainable, distributed outreach". A cornerstone of this outreach is the PyLadies network; 61 mentorship groups distributed worldwide to help women become more active in the Python community.

These examples strongly indicate the R community could similarly reap major improvements in and thus the benefits of female participation by establishing a global network of female mentorship groups to address its recognised gender-based problem.

In terms of existing work, a number of women-centric user groups/meetups ('R-Ladies groups') have independently arisen in recent years, in recognition and response to the known circumstances within the R community, Of these grassroots R-Ladies groups, the San Francisco-based 'R-Ladies' (USA) and London-based 'R-Ladies Coding Club' (UK) are the most established and active. Both groups are based on a model of in-person tutorials and online engagement offered free of charge, funded through private and corporate sponsorship, and have proven highly successful as social initiatives which have established impactful R hubs providing support and development of women coders.

R-Ladies San Francisco - History
- 4 years, founded October 2012
- 708 members, 600 twitter followers, 31 events to date
- Aim: "R-ladies is the first group dedicated to women and R. The goal is to promote R, exchange knowledge and create a network among women."

R-Ladies London - History
- 4 months, founded March 2016
- 430 members, 390 twitter followers, 6 events to date
- Aim: "Promoting women's access to STEM careers, the Free Software Movement, and contributing to the global R Community."

These R-Ladies groups, however, can only fully impact women in a specific geographic radius who are able to access the events. Even through online resources are available these are typically designed to complement events, and cannot substitute for the same in-person experiences necessary to support development. As the two main "R-Ladies" groups developed independently of each other, there is opportunity for learnings to be shared from the longer-running San Francisco to the newer London group. In addition, there are significant efficiencies available from the groups sharing resources to meet common needs to avoid duplication of effort, such as a central website, teaching material, lists of recommended resources, and code repositories.

Following recent presentations by both R-Ladies groups at useR! 2016 however, a number of women have subsequently stated an interest in establishing an R-Ladies group in their area. These localities include New York, Boston, Houston and the Research Triangle (NC) in the US, Manchester, Bristol and Scotland in the UK, Melbourne and Sydney in Australia as well as Dublin (Ireland) and Paris (France).

There is now, therefore, an immediate need and excellent growth opportunity to support the current strong interest by helping establish new R-Ladies groups. As such, R-Ladies San Francisco and London are proposing a 6 month project to mentor and seed new R-Ladies groups, as well as align the R-Ladies brand and resources.

The Plan
Reviewing the learnings from the successful initiatives of the San Francisco and London R-Ladies groups and the examples previously highlighted, we believe there are certain straightforward actions and conditions that effectively encourage female participation and development in all R community roles globally.

- Face-to-face events designed to be accessible and appropriate for the full range of expertise, from complete coding beginner introductions to the community, to running focused training for experienced users with advanced programming skills.

- Creating an environment with favourable conditions conducive to developing women's leadership potential, mentoring, collaboration and knowledge sharing, where members feel able to and encouraged to ask for help.

We therefore propose to develop and scale the existing solutions that San Francisco and London have proven to be effective on a local level to a larger scale, leveraging the newly emerged global interest previously noted, as a constructive approach to addressing the stated problem of women's underrepresentation in the R community.

This will first involve alignment of the necessary assets, inventory and activities of San Francisco and London, having been independently developed, and collaboratively design a global "R-Ladies" brand, including the development of critical centralised infrastructure and shared resources (website, Slack, GitHub).

Subsequently, San Francisco and London can then lead and manage the seeding of new R-Ladies in cities where the local community leaders have started emerging; due to limited budget, new R-Ladies will be selected for investment based on critical success factors (leadership commitment, size of potential target audience, community sustainability, operational requirements etc.)

Actions
- **Month 1: Extract learnings from PyLadies**

- **Months 1-2: Global "R-Ladies" brand development**
  Mission statement, organisational structure, code of conduct, logo, GitHub, Slack

- **Months 1-2: San Francisco & London alignment to global brand**
  Updating relevant group-managed inventory as required

- **Months 1-6: Website**
  R markdown source for ease of maintenance by R-Ladies organisers. Agree and define requirements, Generate statement of work (SOW), hire designer and developer

- **Months 3-6: "R-Ladies in a Box" content development**
  Bookdown with chapters of how to create a R ladies group
  - Meetup set-up step-by-step manual/guide
  - Contact Lists: potential funding, free books
  - Recommended event formats & suggested content/material
    - Popular topics
    - Online courses together
    - Reading groups and discussion
    - Drop in sessions
    - Periscope/Google Hangouts recording for sharing with small groups/individuals
  Learning materials developed by existing R-Ladies groups and others

- **Months 4-6: Initial meetings of seeded groups**

Action	Month					
	1	2	3	4	5	6
Extract learnings from PyLadies	🟩					
Global "R-Ladies" brand development	🟩	🟩				
San Francisco & London alignment to global brand	🟩	🟩				

Website						
"R-Ladies in a Box" content development						
Initial meetings of seeded groups						

Addressing Risks and Assumptions

We identified a number of factors that could compromise the success of a global R-Ladies community:

- **Circumstantial pressures limiting proposee abilities to execute project**: the greatest risk is that the San Francisco and London group leaders/team find they do not have sufficient disposable time to successfully sustain both the minimum activity required for their own R-Ladies groups and progress the proposed project to the schedule above. This risk can be addressed by extending these estimated dates for the global project milestones, recalculating feasible and realistic timelines for achieving each item based on more accurate leader/team availability.

- **Remote establishment risk** : It is difficult to orchestrate efforts remotely. We assume that this risk can be addressed by creating shared infrastructure (e.g. GitHub repositories, website) and utilising a number of channels for communication between organisers and the wider community (e.g. Slack, Twitter, Google+)

- **Lack of attendee interest** : Lack of interest in women-focused events and consequent low event turnout. This might be addressed by investing time in advertising the events more widely via social media, assessing and tailoring events to the R-Ladies members/potential members specific interests, needs and requirements, bringing a friend system, and online streaming of events via Google Hangouts or Periscope.

- **Lack of support and leadership availability**: Lack of volunteer mentors/leaders to organise and lead new groups. Seed funding will be targeted at groups where female R leaders have stepped forward. If there is demand but no local leaders, interested parties will be encouraged to utilise online R-ladies resources and participate in meetings via Periscope or Google Hangouts where available.

How Can The ISC Help

Funding Requirement for the R-Ladies Consolidation and Expansion Project

We estimate this project requires $10,000 to undertake actions outlined in 'The Plan'

Breakdown of Funding Required

Item	Estimated Cost
Website Development (R markdown, hosted on GitHub with instructions on how to fork and create local version)	$4,000
Seed funding for new groups: distributed to new groups to support initial meetings (3 month period, 1 meeting/month). Illustrative costs: • 2 groups, Full-funding (venue hire, food and drink): $3,000 ($1,500 x 2) • 4 groups, Partial-funding (food and drink): $3,400 ($840 x 4) • 3 groups, Full-funding x1 + Partial-funding x2: $3,200 ($1,500 + $840 x 2) Funding will be distributed based on maximum impact with priority given to groups with highest chance of sustainability. Organisers will be encouraged to minimise costs to enable more meetings/groups to be supported. Some groups will not require financial support. Once established, groups will be encouraged to seek local sponsors.	$3,500
Contribution towards collective time costs for San Francisco and London proposees incurred undertaking key project activities: • Extracting learnings from PyLadies • Global "R-Ladies" brand development • San Francisco & London alignment to global brand	$2,500

• "R-Ladies in a Box" content development • Development of new event formats, learning materials, community management tools/methods, and shareable resources Contribution towards selected San Francisco and London operations, such as: • External speakers (travel expenses) • Venue hire, food and drink	
Global R-Ladies: on-going group operational costs • Domain costs for r-ladies.com/r-ladies.org/rladies.org: $36 ($12 x 3) • Hosting (e.g. aws s3 storage): $20/month • Meetup pro fees for 6 months: $120-$360 ($10/month x 6 x 2-6 groups)	*Funded by Excess cost estimated from other items*

Non-Monetary ISC Help

- ISC-assisted publicity - promoting R-Ladies events and announcing major developments to ISC networks (R Consortium, Consortium Members etc.) using social media, mailing lists etc.
- Arranging access to venues to host R-Ladies event.

Dissemination

The alignment of R-Ladies San Francisco and London's resources on one website, GitHub and Slack will provide an excellent centralised location for new and current R-Ladies members, and enable new groups to establish and grow under the R-Ladies global support network.

Actions to raise awareness of the new "R-Ladies" to R community:
- R bloggers - "Introducing R-Ladies" post, R consortium blog - "Support R-Ladies" & "R-Ladies growth" posts and R-Ladies presentations (San Francisco and London) from useR! 2016 added to GitHub.

Public online platforms to be developed and leveraged for maximum accessibility:
- Website - centralized location of R ladies resources, start up material, groups and support
- GitHub - centralised coding, training material and presentations.
- Where possible all resources will be under Open Source License: General Public License (**https://opensource.org/licenses/gpl-license**)

Planned publicity by R-Ladies for R-Ladies
> Combination of a global and several local outlets to allow both general and local-specific responses in the relevant time zones for Twitter, LinkedIn and Meetup, such as are already established for the San Francisco and London groups.

- **Twitter Global** : @RLadies needs to be established for R-Ladies alignment but groups will still be encouraged to keep their own twitter handles for their own members, but will encourage members to follow the global group. This will allow timely responses in the different time zones (@RladiesSF, @RLadiesLondon).
- **LinkedIn** (London : R-Ladies Coding Club (London) https://www.linkedin.com/groups/8494071 San Francisco : R-ladies https://www.linkedin.com/groups/5124867)
- Promote **Meetup pages** to relevant new members (San Francisco : http://www.meetup.com/R-ladies/ London : http://www.meetup.com/R-Ladies-Coding-Club-London/)
- **Eventbrite** listings for all R-Ladies events
- **Improve searchability** of "R-Ladies" by increasing search relevance on major search engines

References

D. Nolan (1992) . "Women in Statistics in Academe: Mentors Matter." *Statistical Science*, 7(2), pp. 267-272.
J. McGrath Cohoon and F. Raoking (2013). "Professional development for mid-career women in computer science and engineering." *2013 IEEE Frontiers in Education Conference (FIE)*, Oklahoma City, OK, pp. 618-622.

Appendix

Testimonials
London (2016)

"The R Coding Club for Ladies group is amazing! I'd been looking to learn R and was using online resources to assist me. But decoding CRAN help pages and googling Stack Overflow message boards can only get you so far. It has been wonderful finding a very supportive group of non-judgemental mentors to guide me (and many others) via structured sessions in R. What's more - this group is absolutely free! It's clear the organisers are motivated purely due to their passion of R and the joy of teaching others. This group is inclusive of all new learners - however knowing the group would have a number of women participating really encouraged me to get involved. There are other groups out there, but programming is often male dominated and sometimes it can be intimidating admitting how novice you are in these environments. This is a great initiative to empower women who like to learn in collaborative environments. I would wholeheartedly recommend this generous group to anyone upskilling in R!" - **Linda, upskilling from SAS**

"I attended my first R-ladies event at Google Campus and an introduction to the wonders of Data Visualisations, Interactive Apps and how to publish and share your analysis with R markdown. The mentors all loved what they do and were really inspiring. I later joined some friends for dinner and told them I wanted to be an Analyst/Data Scientist! As I had left my job a couple of weeks before and was applying for Analyst roles, having the support of the mentors to ask questions about the transition was unbelievably helpful, to help understand how I could make the most of the skills I already had and at the same time as finding a role where I would be using R and grow my skills in that area. I recently received an offer as a Product Analyst where I will get to do both, and am super grateful for the encouragement from R-Ladies throughout the process. Hopefully I'll be mentoring others soon! - **Annabel, Product Analyst**

"R Ladies is amazing and I've so appreciated the last two sessions! R Ladies London has pushed me to put more time into learning R, as well as providing a community where I feel supported and able to ask for help. The talks are accessible, but also cater to the more advanced users, whilst their novice workshop gave me a real headstart - by the end of it I was able to apply what I learnt to begin analysing datasets to get better, more actionable diversity information for work. I'm also really impressed by the size of the community, and the range of professionals they've attracted; from scientists, to developers, to finance to marketing." **- Jenny, Developer**

"Thanks again for the workshop this week. We covered off everything I had learnt in the 20 hour Datacamp course in one evening! It was a great comfort that I am on the right track and I made a friend too :D

The R-ladies meetup group has been a game changer in my step up from simply coding in SQL to making the leap into the world of Data Science. Chiin and the R ladies team have demystified R by focusing on the real world applications , breaking the functions into bite sized pieces and being approachable when I have questions about my projects and the industry. Taking part in hands on workshops has made me more comfortable with the skills I have gained and given me the confidence to use R to make my work more efficient." - **Helen, Marketing Insights Analyst**

San Francisco (2013 - 2015)

"Great group! Hope to stay connected with all of you and I'm looking forward to more meet-ups in the future."**- Amy**

" Thanks to Gabriela and Shared! I am so grateful!" **- Anya**

"What a great opportunity to meet other people and learn. HIGHLY Recommend this group."**- Melissa**