

Building websites in RStudio

Maria Tackett
Duke University

RLadies
Spring 2021



bit.ly/rladies-build-websites

Motivation

Distill +
Blogdown

Making a
website

Tips

Motivation

Distill +
Blogdown

Making a
website

Tips

Background



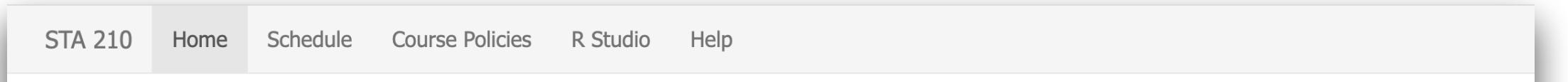
- Made simple websites in high school and college using HTML
- Took one web programming class in college (HTML, CSS, PHP, Perl)

Background



- Regularly use R and R Markdown
- Enjoy playing around with websites and trying new things in R
- Really good at Google searches

Wanted a website for my class...



STA 210: Regression Analysis

In this course, you will learn approaches to analyzing multivariate data sets, emphasizing the analysis of variance, linear regression, and logistic regression. You will learn techniques for checking the appropriateness of proposed models, such as residual analyses and case influence diagnostics, and techniques for selecting models. The class emphasizes data analysis over mathematical theory.

By the end of the semester, you will...

- Know methods for analyzing multivariate datasets and understand how these methods are applied in research
- Know how to check whether proposed statistical models are appropriate for given data
- Develop a proficiency in addressing complex research questions using statistical evidence
- Understand the process of data-based research by working on an independent research project

Course Information

STA 210 Home Schedule Course Policies R Studio Help

Course Schedule

Note: This schedule may be updated as the semester progresses.

Week	Date	CH	Slides	Labs	HW	Recommended	Project
1	Tu: Aug 28		Course Introduction				
	Th: Aug 30	1-3	Review: Confidence Intervals				
2	M: Sep 3		Intro to R	Lab 1			
	Tu: Sep 4	1-3	Review: Hypothesis Tests				
3	Th: Sep 6	5.1 - 5.5	ANOVA		HW 1 open	5.5, 6.1, 6.2	
	M: Sep 10		Comparing Means with R	Lab 2 (due 9/19)			
	Tu: Sep 11	5.1 - 5.5	ANOVA: Part 2			5.5, 6.1, 6.2	
4	Th: Sep 13		Class Canceled		HW 2 open		
	M: Sep 17		Linear Regression	Lab 3	HW 1 due		
	Tu: Sep 18	7	Simple Linear Regression				
	Th: Sep 20	8.1-8.4, 8.6	Simple Linear Regression		HW 2 due HW 3 open		
	M: Sep 24		Displaying Output	Lab 4			

```
<tr>
  <td>Th: Sep 6</td>
  <td>5.1 - 5.5</td>
  <td><a href=".//slides/lectures/04_anova.html" target="_blank">ANOVA</a></td>
  <td>&ampnbsp</td>
  <td><a href=".//assignments/hw/hw1.html" target="_blank">HW 1 open</a></td>
  <td>5.5, 6.1, 6.2</td>
  <td>&ampnbsp</td>
</tr>
```

- Code is difficult to read
- Easy to make mistake
- Takes a while to update
- Limited by HTML knowledge and time

The following semester...

The screenshot shows the STA 210 course website. At the top, there's a navigation bar with links for HOME, SCHEDULE, POLICIES, RSTUDIO, GITHUB, and HELP. Below the navigation bar, there's a decorative header image featuring various data visualizations like box plots and scatter plots.

Course info

Lectures
Old Chem 116 Mon and Wed 10:05a - 11:20a

Labs

Schedule

Date	Lesson	Slides	Reading	Lab	AE	HW	Project
Week 00							
Wed, Jan 9	Welcome to Regression Analysis						
Fri, Jan 11	Lab 00: Logistics						
UNIT 1 CONTINUOUS RESPONSE VARIABLES							
Week 01							
Mon, Jan 14	Motivating regression analysis						
Wed, Jan 16	Simple Linear Regression (SLR)						
Fri, Jan 18	Lab 01: Intro to R						
Week 02							
Mon, Jan 21	NO CLASS - Martin Luther King, Jr. Day						
Wed, Jan 23	SLR: Inference						
Fri, Jan 25	Lab 02: Simple Linear Regression (SLR)						
Week 03							
Mon, Jan 28	SLR: Inference & Prediction						

stat.duke.edu/courses/Spring19/sta210.001

lessons:

- title: "Week 00"
- date: "Wed, Jan 9"
title: "Welcome to Regression Analysis"
slides: "lec-slides/00-intro.html"
appex: "00-movies.html"
- date: "Fri, Jan 11"
title: "Lab 00: Logistics"
slides: "lab-slides/00-lab-slides.html"

- Code is intuitive & easy to read
- Quick to update
- Not limited by my HTML knowledge

STA 210

HOME SCHEDULE POLICIES RSTUDIO GITHUB HELP

Course info

Lectures
Old Chem 116 Mon and Wed 10:05a - 11:20a

Labs
Lab 01 Soc Sci 311 Fri 11:45a - 1p
Lab 02 Soc Sci 311 Fri 1:25p - 2:40p

Teaching team and office hours

Instructor	Prof. Maria Tackett	Tues 10:30a - 12p	Old Chem 118B
TAs	Anna Darwish	Mon 3p - 5p	Old Chem 203B
	Matty Pahren	Wed 12:30p - 2:30p	Old Chem 203B

[Link to site](#)

Design based on

STA 199

HOME SYLLABUS POLICIES RSTUDIO GITHUB HELP

Course info

wrangling and munging, exploratory data analysis, predictive modeling, and data visualization, and effective communication of results. Work on problems and case studies inspired by and based on real-world questions and data. The course will focus on the R statistical computing language.

[Link to site](#)

Design based on

ESPM 157

HOME MODULES TUTORIALS SYLLABUS POLICIES

Course info

Lectures
French 2231 Mon and Wed 3:05 - 4:20

Labs
Soc Sci 311 Thurs 1:25 - 2:40 or Thurs 2:05 - 4:20 or Thurs 4:40 - 5:55

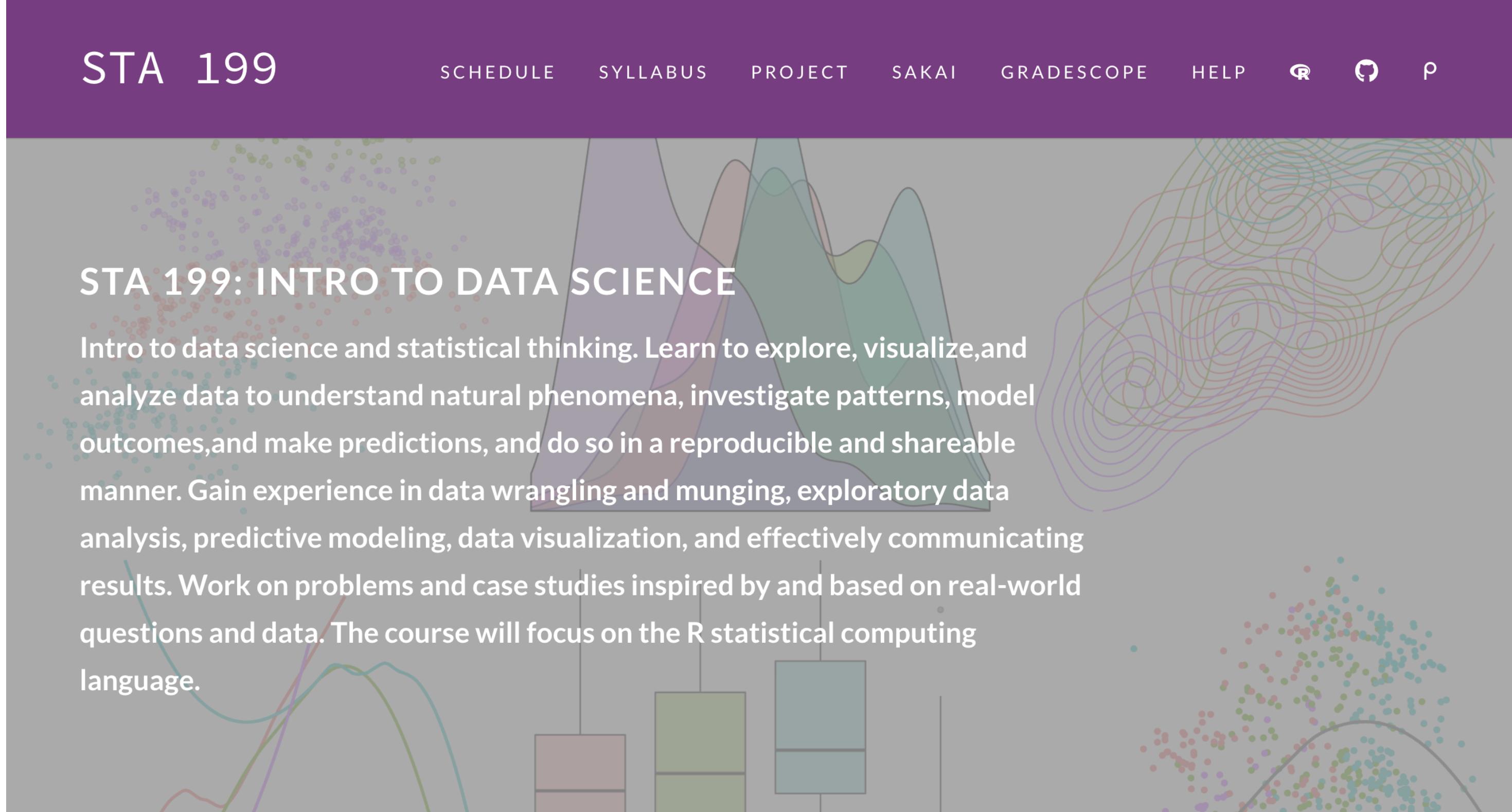
[Link to site](#)

Overview

This course is designed for upper division undergraduate students regardless of prior experience. We aim to be accessible to those new to programming, but those who have been using R for years will find new material in this opinionated and fast moving area. The course is project focused and centered around five [modules](#) reproducing important results in global change ecology. A series of short [tutorials](#) will introduce relevant technology, but most concepts will be first introduced in reading outside of class, leaving class time to focus on the more complex examples encountered in the modules.

[Link to site](#)

Combine elements from multiple sites



The screenshot shows the STA 199 course website. The header is purple with white text, featuring "STA 199" on the left and links for "SCHEDULE", "SYLLABUS", "PROJECT", "SAKAI", "GRADESCOPE", "HELP", and three icons on the right. The main content area has a grey background with abstract data visualizations like density plots and box plots. It displays the course title "STA 199: INTRO TO DATA SCIENCE" and a detailed description of the course content.

STA 199: INTRO TO DATA SCIENCE

Intro to data science and statistical thinking. Learn to explore, visualize, and analyze data to understand natural phenomena, investigate patterns, model outcomes, and make predictions, and do so in a reproducible and shareable manner. Gain experience in data wrangling and munging, exploratory data analysis, predictive modeling, data visualization, and effectively communicating results. Work on problems and case studies inspired by and based on real-world questions and data. The course will focus on the R statistical computing language.

sta199-fa20-002.netlify.app

tidymodels.org

+

introducer.org

+

[datavizm20](#)

Combine elements from multiple sites

Tidymodels

PACKAGES GET STARTED LEARN HELP CONTRIBUTE 🔍 🌐

GET STARTED

1 Build a model

2 Preprocess your data with recipes

3 Evaluate your model with resampling

4 Tune model parameters

5 A predictive modeling case study

TIDYMODELS PACKAGES: broom, parsnip

- INTRODUCTION
- THE SEA URCHINS DATA
- BUILD AND FIT A MODEL
- USE A MODEL TO PREDICT
- MODEL WITH A DIFFERENT ENGINE
- WHY DOES IT WORK THAT WAY?
- SESSION INFORMATION

INTRODUCTION

How do you create a statistical model using tidymodels? In this article, we will walk you through the steps. We start with data for modeling, learn how to specify and train models with different engines using the [parsnip package](#), and understand why these functions are designed this way.

To use code in this article, you will need to install the following packages: broom.mixed, dotwhisker, readr, rstanarm, and tidymodels.

Stuck? Confused? Ask for help.

tidymodels.org

IDS Timetable Schedule Syllabus Help Extra credit Project Resources People 🔍 🌐 🌐

Videos

You have two options for watching the course videos, on YouTube or on MediaHopper. You can also find a playlists for all course videos on YouTube [here](#) and on MediaHopper [here](#).

No.	Title	YouTube	MediaHopper	Slides	Length
01	Keeping up with IDS: Week 2				10:25
02	Data and visualisation				23:52
03	Visualising data with ggplot2				21:40
04	Visualising numerical data				23:57
05	Visualising categorical data				6:28
06	AE: StarWars + Dataviz				5:18

Assignments

Assignment	Title	Due
Due this week		
Lab 00	Hello IDS!	Tue, 29 Sep, 16:00 UK
HW 00	Pet names	Thur, 1 Oct, 16:00 UK
EC	Extra credit	Multiple (see assignment)

introds.org

STA 199 SCHEDULE SYLLABUS PROJECT SAKAI GRADESCOPE HELP 🔍 🌐 🌐

Schedule

Week 01: Intro

Week 02: Data viz

Week 03: Data wrangle

Week 04: Probability

Week 05: Bootstrap + Data Ethics

Week 06: Sim-based testing

Week 07: Central Limit Theorem

Week 08: Two-sample-inference

Week 09: Linear models

Week 01: Intro

- LECTURES
- READINGS
- ASSIGNMENTS
- OTHER RESOURCES

Lectures

SLIDES	VIDEOS	APPLICATION EXERCISE (AE)	
Monday	Welcome to STA 199!	Welcome to STA 199!	Live lecture slides
		Tour of website + Sakai	UN Votes
Wednesday	Meet the Toolkit	Meet the Toolkit	Tour of RStudio + GitHub

Readings

sta199-fa20-002.netlify.app

Distill + Blogdown

Motivation

Tips

Making a
website

Packages to make websites in R



Distill

- Designed to make websites for scientific communication
- Supports R Markdown, LaTex, citations, footnotes, etc.
- Structure is great for blogs



Distill - Pros and cons

Pros

- Make a nice website “quickly”
- Simple file structure makes it easy to update

Cons

- Same basic design for every site (there are new templates!)

More on Distill soon!

Blogdown



- Designed for building websites using Hugo, a website generator
- Access a lot of different website designs
- Use R Markdown and R functions to build and maintain website

Hugo Academic theme

HUGO News Docs Themes Showcase Community GitHub Search the Docs

Hugo Themes

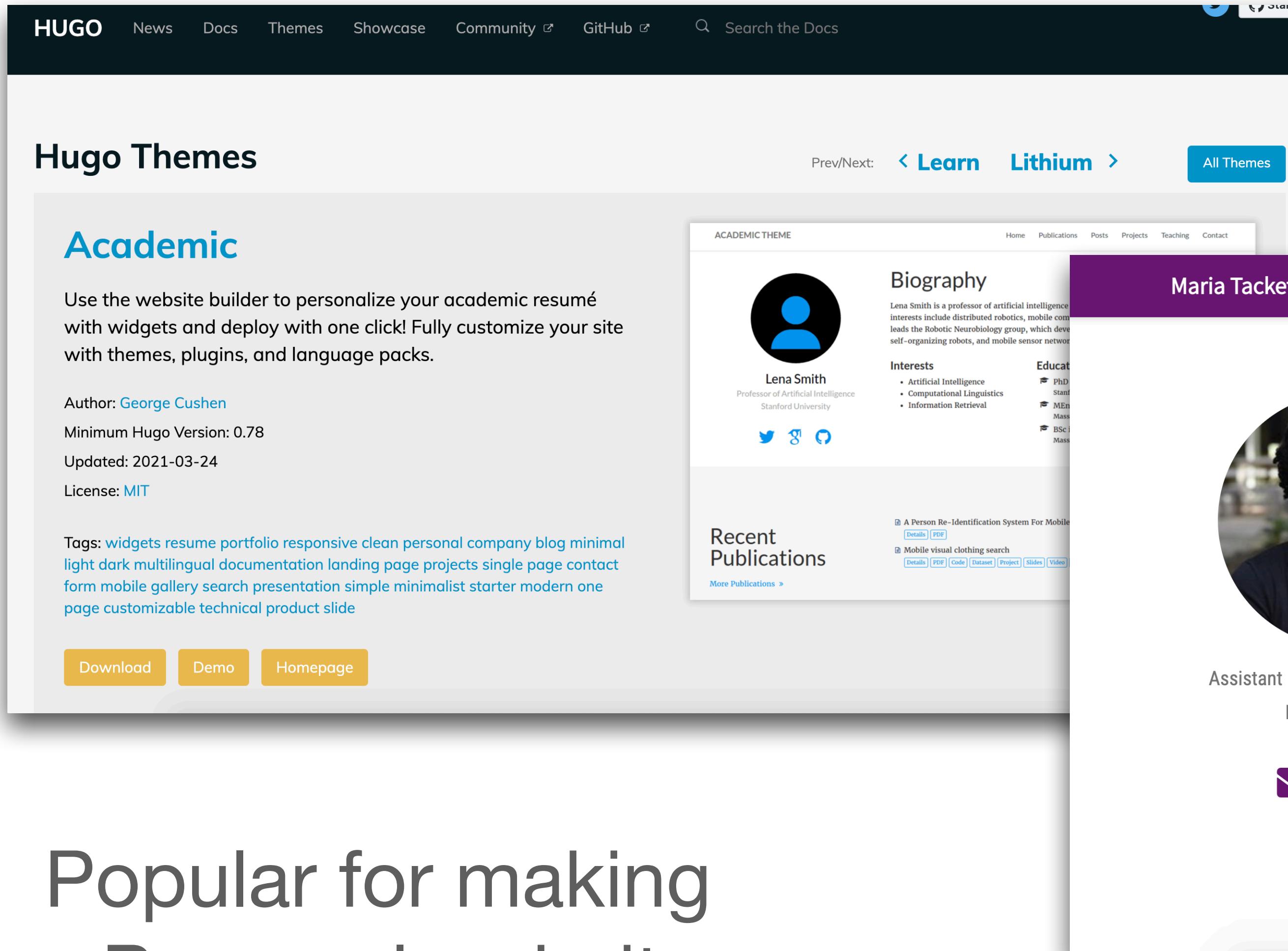
Academic

Use the website builder to personalize your academic resumé with widgets and deploy with one click! Fully customize your site with themes, plugins, and language packs.

Author: [George Cushen](#)
Minimum Hugo Version: 0.78
Updated: 2021-03-24
License: [MIT](#)

Tags: widgets resume portfolio responsive clean personal company blog minimal light dark multilingual documentation landing page projects single page contact form mobile gallery search presentation simple minimalist starter modern one page customizable technical product slide

[Download](#) [Demo](#) [Homepage](#)



The screenshot shows the Hugo Themes website interface. At the top, there's a navigation bar with links for HUGO, News, Docs, Themes, Showcase, Community, GitHub, and a search bar. Below this, a banner for the 'Academic' theme is displayed. The banner features a large blue header with the theme name in white. Below the header, there's a preview of the theme's layout, which includes a sidebar with a user profile (Lena Smith, Professor of Artificial Intelligence at Stanford University), a main content area with sections for Biography, Interests, and Education, and a footer with social media links (Twitter, Google+, GitHub). A call-to-action section at the bottom offers 'Download', 'Demo', and 'Homepage' buttons.

Maria Tackett



Maria Tackett is an Assistant Professor of the Practice in the Department of Statistical Science at Duke University. Her research focuses on using technology and active learning techniques to enhance student learning and motivation in large undergraduate statistics courses. Prior to joining the faculty at Duke, she earned a Ph.D. in Statistics from the University of Virginia, where her research focused on using a Bayesian approach to quantify uncertainty in forensic science techniques, with an emphasis on latent fingerprint evidence.

Education

- Ph.D. in Statistics, 2018
University of Virginia
- M.S. in Statistics, 2010
University of Tennessee
- B.S. in Mathematics, 2009
University of Tennessee

www.mariatackett.net

- ## Popular for making
- Personal websites
 - Course websites

New blogdown site

```
#install.packages("blogdown")
#blogdown::install_hugo()

blogdown::new_site(theme = "yihui/hugo-lithium")
```

Markdown files with web contents

```
1 ---  
2 date: "2016-05-05T21:48:51-07:00"  
3 title: About  
4 ---  
5  
6 This is a "hello world" example website for the  
[**blogdown**](https://github.com/rstudio/blogdown) package. The  
theme was forked from  
[@jrutheiser/hugo-lithium-theme](https://github.com/jrutheiser/hugo  
-lithium-theme) and modified by [Yihui  
Xie](https://github.com/yihui/hugo-lithium).|  
7
```

File structure

	Name	Size
	..	
	.Rprofile	963 B
	config.yaml	794 B
	content	
	index.Rmd	39 B
	layouts	
	my-site.Rproj	205 B
	netlify.toml	308 B
	R	
	resources	
	static	
	themes	

New blogdown site

The screenshot shows a "hello world" example website for the `blogdown` package. The page has a light gray header with a dark blue background containing the title "New blogdown site". Below the header is a yellow box containing R code:

```
#install.packages("blogdown")
#blogdown:
blogdown::
```

A red circular badge with the letters "Li" is positioned next to the code. The main content area features a large section titled "About". Below the title, a paragraph explains the purpose of the site:

This is a "hello world" example website for the `blogdown` package. The theme was forked from [@jrutheiser/hugo-lithium-theme](#) and modified by [Yihui Xie](#).

On the left side of the content area, there is a vertical sidebar with some code snippets:

```
1 ---  
2 date: "2016-0  
3 title: About  
4 ---  
5  
6 This is a "he  
[**blogdown**]  
theme was for  
[@jrutheiser/  
-lithium-theme  
Xie](https://gith  
7
```

At the bottom of the page, there is a footer with links to "RSS feed" and "Made with ". The footer also includes a "static" folder icon and a "themes" folder icon.

Blogdown - Pros and cons

Pros

- A lot of web design templates to choose from
- Can make a highly customized website

Cons

- Can take time to figure out file structure
- Hugo updates can sometimes break things (There are ways around this)

Motivation

Distill +
Blogdown

Making a
website

Tips

matackett.github.io/rldadies-build-websites/

Building Websites in RStudio

More websites Example article

Welcome! 😊

Welcome! This website is a demo for the *Building Websites in RStudio* talk presented at [RLadies Amherst](#) and [RLadies Baltimore](#) in Spring 2021. The site includes slides and additional resources to learn more about using [Distill](#) and [Blogdown](#) making websites in RStudio.

Resources

Distill

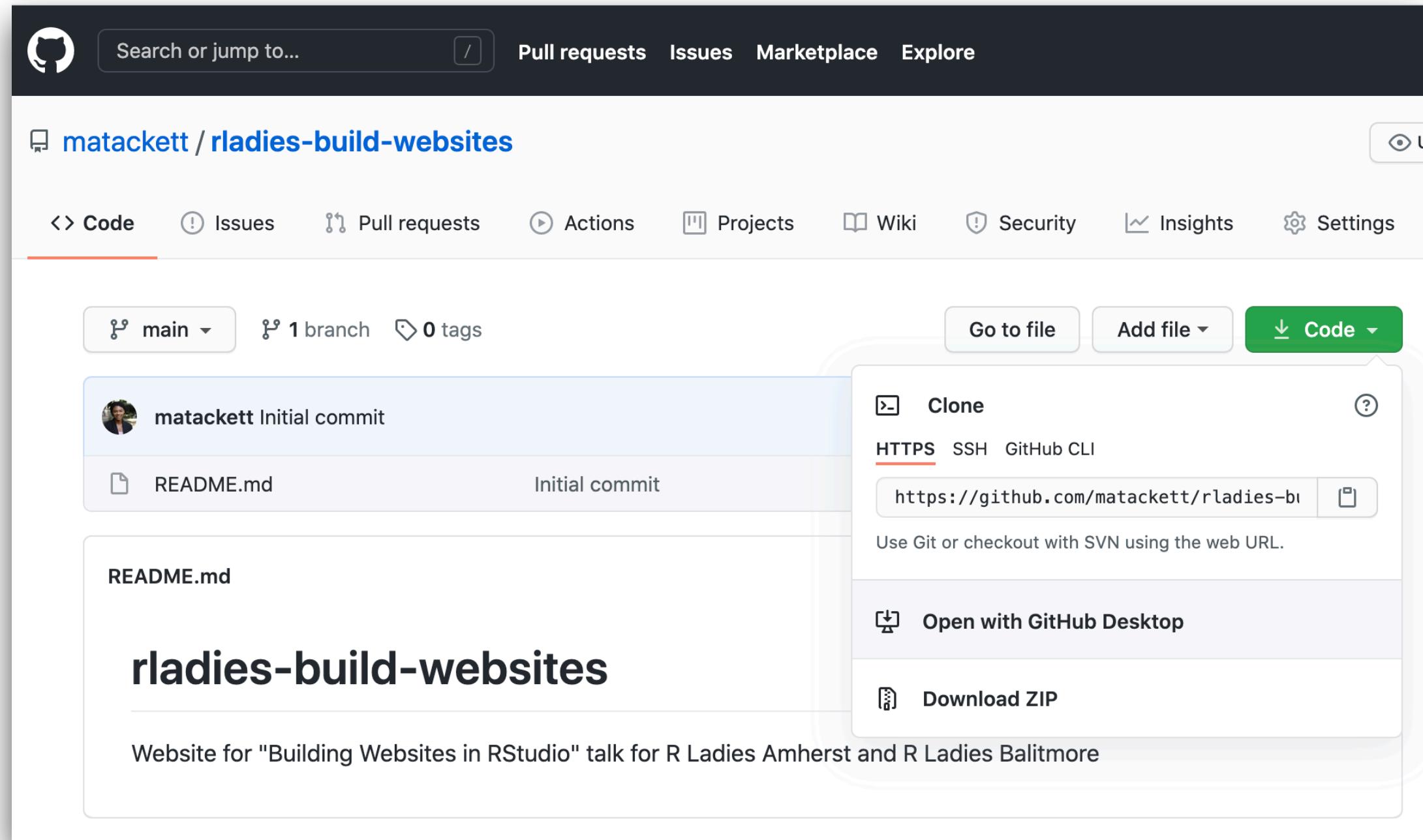
- [Distill for R Markdown](#) by JJ Allaire, Rich Iannone, Alison Presmanes Hill, Yihui Xie ORCID ID
- [\(Re-\)introducing Distill for R Markdown](#) blog post by Alison Hill and JJ Allaire
- [M-F-E-O: postcards + distill](#) blog post by Alison Hill
- [postcards package](#) by Sean Kross

Blogdown

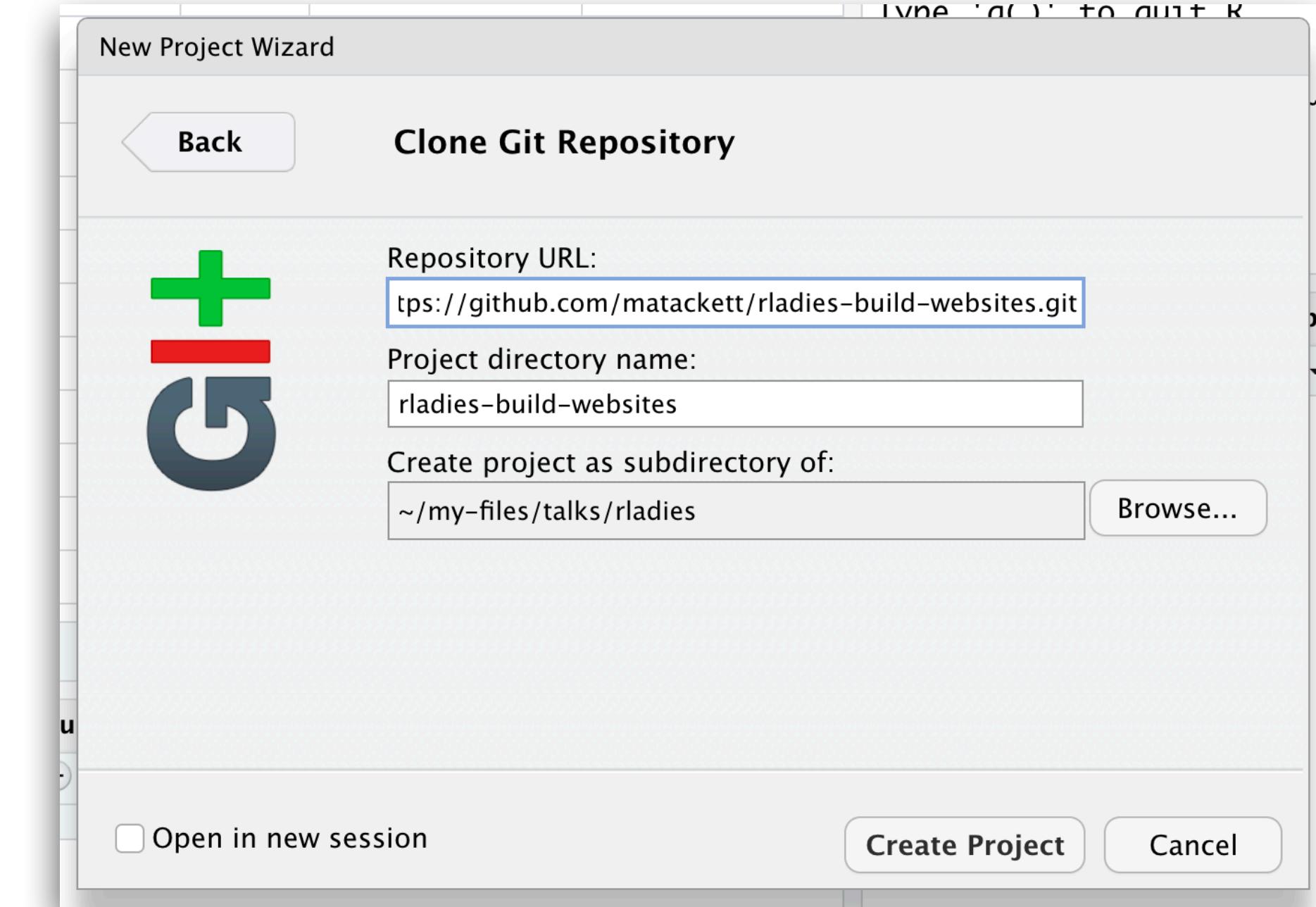
- [blogdown: Creating Websites with R Markdown](#) by Yihui Xie, Amber Thomas, Alison Hill
- [Blog posts](#) by Alison Hill

matackett.github.io/rldadies-build-websites

Start with a GitHub repo



A screenshot of a GitHub repository page for 'matackett / rladies-build-websites'. The 'Code' dropdown menu is open, showing options like 'Clone', 'HTTPS', 'SSH', 'GitHub CLI', and links to 'Open with GitHub Desktop' and 'Download ZIP'. The repository has 1 branch and 0 tags.



A screenshot of the RStudio 'New Project Wizard' showing the 'Clone Git Repository' step. It displays the repository URL 'https://github.com/matackett/rladies-build-websites.git', the project directory name 'rladies-build-websites', and the option to create it as a subdirectory of '~my-files/talks/rladies'. There are 'Create Project' and 'Cancel' buttons at the bottom.

- Make a repo in GitHub
- The name will become part of the URL for the website
- Clone the repo
- Start a new RStudio project

Create new Distill site

```
library(distill)  
create_website(dir = ".", title = "Building Websites in RStudio", gh_pages = TRUE)
```

```
.  
├── rladies-build-websites.Rproj  
├── docs/  
│   └── _site.yml  
└── index.Rmd  
    └── about.Rmd
```

File structure

Create new Distill site

```
library(distill)
create_website(dir = ".", title = "Building Websites in RStudio", gh_pages = TRUE)
```

```
1 ---  
2 title: "Building Websites in RStudio"  
3 description: |  
4   Welcome to the website. I hope you enjoy it!  
5 site: distill::distill_website  
6 ---  
7  
8 ```{r setup, include=FALSE}  
9 knitr::opts_chunk$set(echo = FALSE)  
10  
11 # Learn more about creating websites with Distill at:  
12 # https://rstudio.github.io/distill/website.html  
13  
14 # Learn more about publishing to GitHub Pages at:  
15 # https://rstudio.github.io/distill/publish\_website.html#github-pages  
16  
17 ````  
18
```

index.Rmd

- ✓ Home page for the website
- ✓ site key in the YAML

Create new Distill site

```
library(distill)
create_website(dir = ".", title = "Building Websites in RStudio", gh_pages = TRUE)
```

```
1 name: "rladies-build-website"
2 title: "Building Websites in RStudio"
3 - description: |
4   Building Websites in RStudio
5 output_dir: "docs"
6 - navbar:
7   right:
8     - text: "Home"
9       href: index.html
10    - text: "About"
11      href: about.html
12 output: distill::distill_article
13
14
```

_site.yml

✓ Website configuration file

_site.yml

```
1 name: "rladies-build-website"
2 title: "Building Websites in RStudio"
3 - description: I
4   Building Websites in RStudio
5 output_dir: "docs"
6 - navbar:
7   right:
8     - text: "Home"
9       href: index.html
10    - text: "About"
11      href: about.html
12 output: distill::distill_article
13
14
```



navbar:

Navigation bar at top of page

text:

Text for link in navigation bar

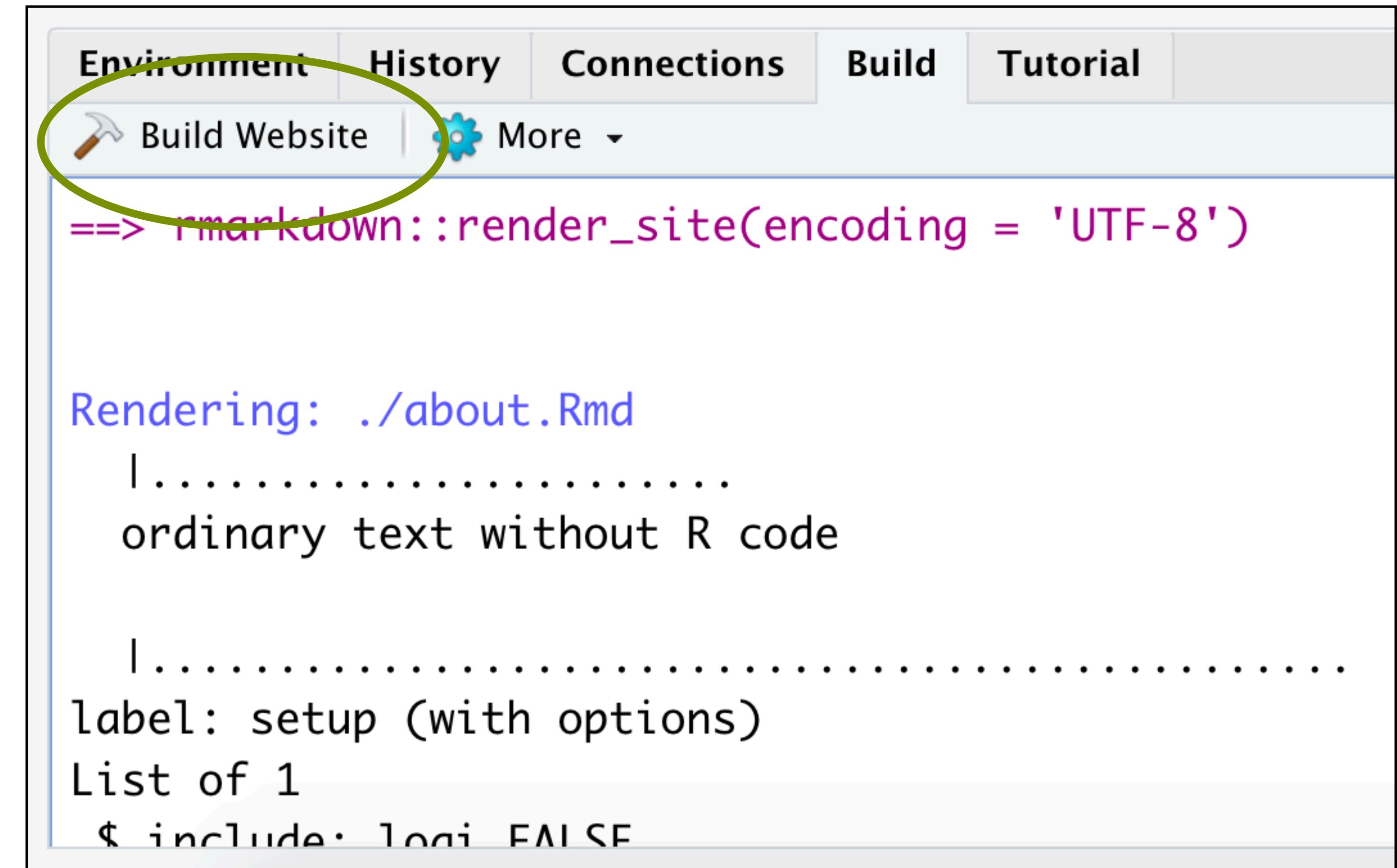
href:

(Relative) link to page

Build website

Click to build and view website.

Use periodically to see the changes.



The screenshot shows the RStudio interface with the 'Build' tab selected. A green oval highlights the 'Build Website' button, which has a hammer icon and the text 'Build Website'. Below the toolbar, the command `==> rmarkdown::render_site(encoding = 'UTF-8')` is displayed in purple. The main pane shows the output of the rendering process:

```
Rendering: ./about.Rmd
|.....
ordinary text without R code
|.....
label: setup (with options)
List of 1
$ include: logi FALSE
```

Let's take a look!

The screenshot shows a website with a dark blue header bar. On the left of the header is the text "Building Websites in RStudio". On the right are two white links: "Home" and "About". The main content area below the header has a light gray background. In the center, there is a large, bold, black title: "Building Websites in RStudio". Below the title, there is a single line of text: "Welcome to the website. I hope you enjoy it!". A thin horizontal line is visible just above the bottom edge of the content area.

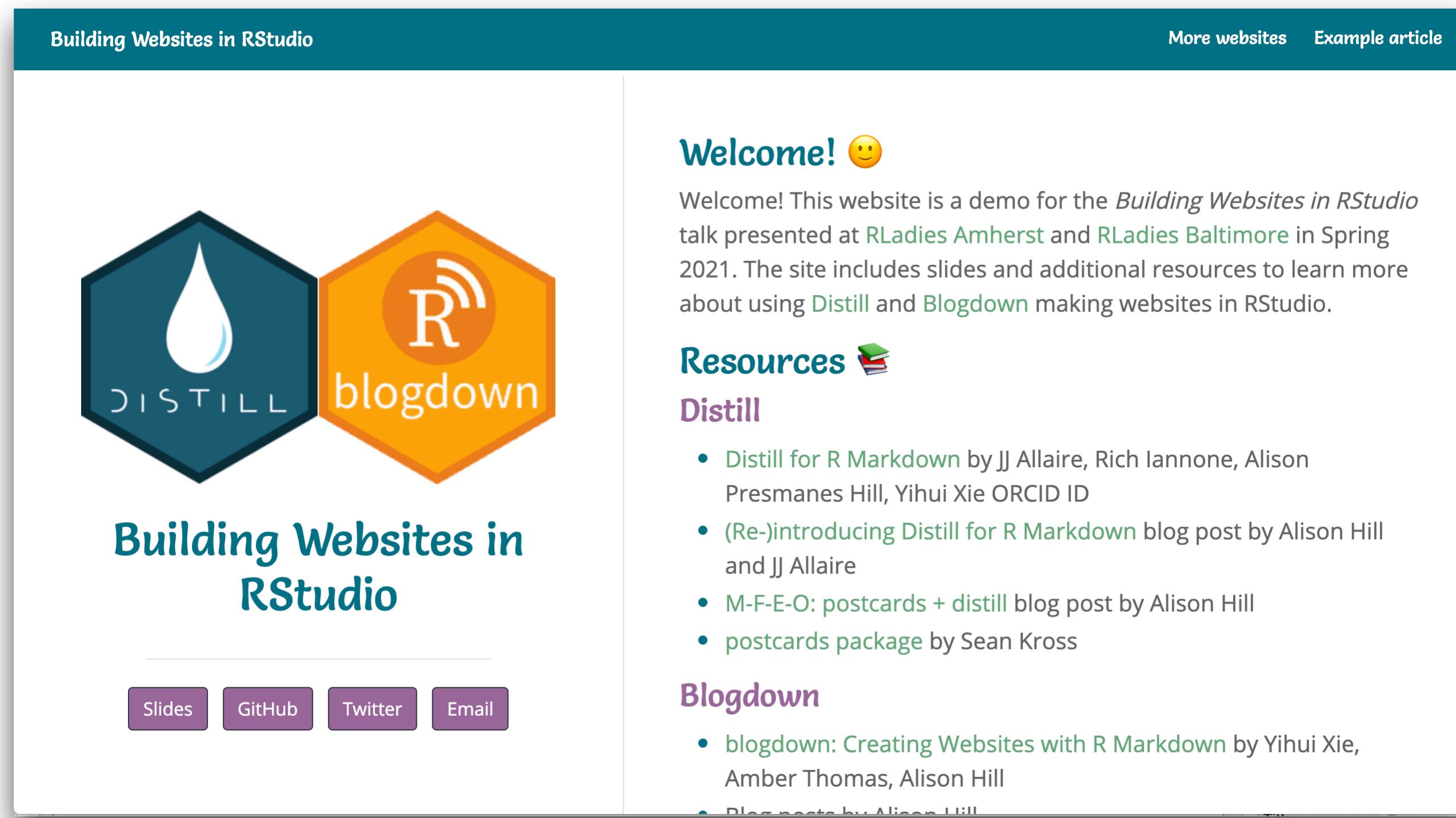
Building Websites in RStudio

Home About

Building Websites in RStudio

Welcome to the website. I hope you enjoy it!

Make the home page



The screenshot shows a demo website for "Building Websites in RStudio". At the top left is the "DISTILL" logo (blue hexagon with a white water drop). Next to it is the "R blogdown" logo (orange hexagon with a white "R" and "blogdown" text). Below these logos, the title "Building Websites in RStudio" is displayed. At the top right are links for "More websites" and "Example article". A "Welcome!" message with a smiley face emoji follows, followed by a detailed welcome text about the demo site being a demo for a talk at RLadies Amherst and RLadies Baltimore in Spring 2021, and including slides and resources for learning Distill and Blogdown. Below this is a "Resources" section with two subsections: "Distill" and "Blogdown", each containing a bulleted list of links to further reading.

Building Websites in RStudio

Welcome! 😊

Welcome! This website is a demo for the *Building Websites in RStudio* talk presented at [RLadies Amherst](#) and [RLadies Baltimore](#) in Spring 2021. The site includes slides and additional resources to learn more about using [Distill](#) and [Blogdown](#) making websites in RStudio.

Resources 📚

Distill

- [Distill for R Markdown](#) by JJ Allaire, Rich Iannone, Alison Presmanes Hill, Yihui Xie ORCID ID
- [\(Re-\)introducing Distill for R Markdown](#) blog post by Alison Hill and JJ Allaire
- [M-F-E-O: postcards + distill](#) blog post by Alison Hill
- [postcards package](#) by Sean Kross

Blogdown

- [blogdown: Creating Websites with R Markdown](#) by Yihui Xie, Amber Thomas, Alison Hill
- [Blog posts by Alison Hill](#)

More websites Example article

Slides GitHub Twitter Email

- Make a new page using the **postcards** R package
- Template that gives us the basic structure of the page.
- All we need to do is customize it!

“Create simple, beautiful personal websites and landing pages using only R Markdown.” - [postcards GitHub site](#)

Make new page using postcards

```
#install.packages("postcards")
library(distill)
create_article(file = "home", template = "trestles", package = "postcards")
```

home.Rmd

```
1 ---  
2 title: "Frank Hermosillo"  
3 image: "frank.jpg"  
4 links:  
5   - label: LinkedIn  
6     url: "https://linkedin.com/"  
7   - label: Twitter  
8     url: "https://twitter.com/"  
9   - label: GitHub  
10    url: "https://github.com/"  
11   - label: Email  
12     url: "mailto:email@email.com"  
13 output:  
14   postcards::trestles  
15 ---  
16  
17 ## Bio  
18  
19 Frank Hermosillo studies neural networks and their applications at  
20 Google Brain. His research focuses on differentiable network pruning  
21 approximation and decentralized gradient inversion mechanics. He frequently collaborates  
22 with researchers who study machine learning, computer vision, and cognitive science.
```

home.html

Building Websites in RStudio

Home About



Frank Hermosillo

[LinkedIn](#) [Twitter](#) [GitHub](#) [Email](#)

Bio

Frank Hermosillo studies neural networks and their applications at Google Brain. His research focuses on differentiable network pruning approximation and decentralized gradient inversion mechanics. He frequently collaborates with researchers who study machine learning, computer vision, and cognitive science. His work has been featured in WIRED, The Atlantic, Newsweek, and The New York Times Magazine.

Education

Massachusetts Institute of Technology | Cambridge, MA
Ph.D. in Computer Science | September 2009 - May 2014

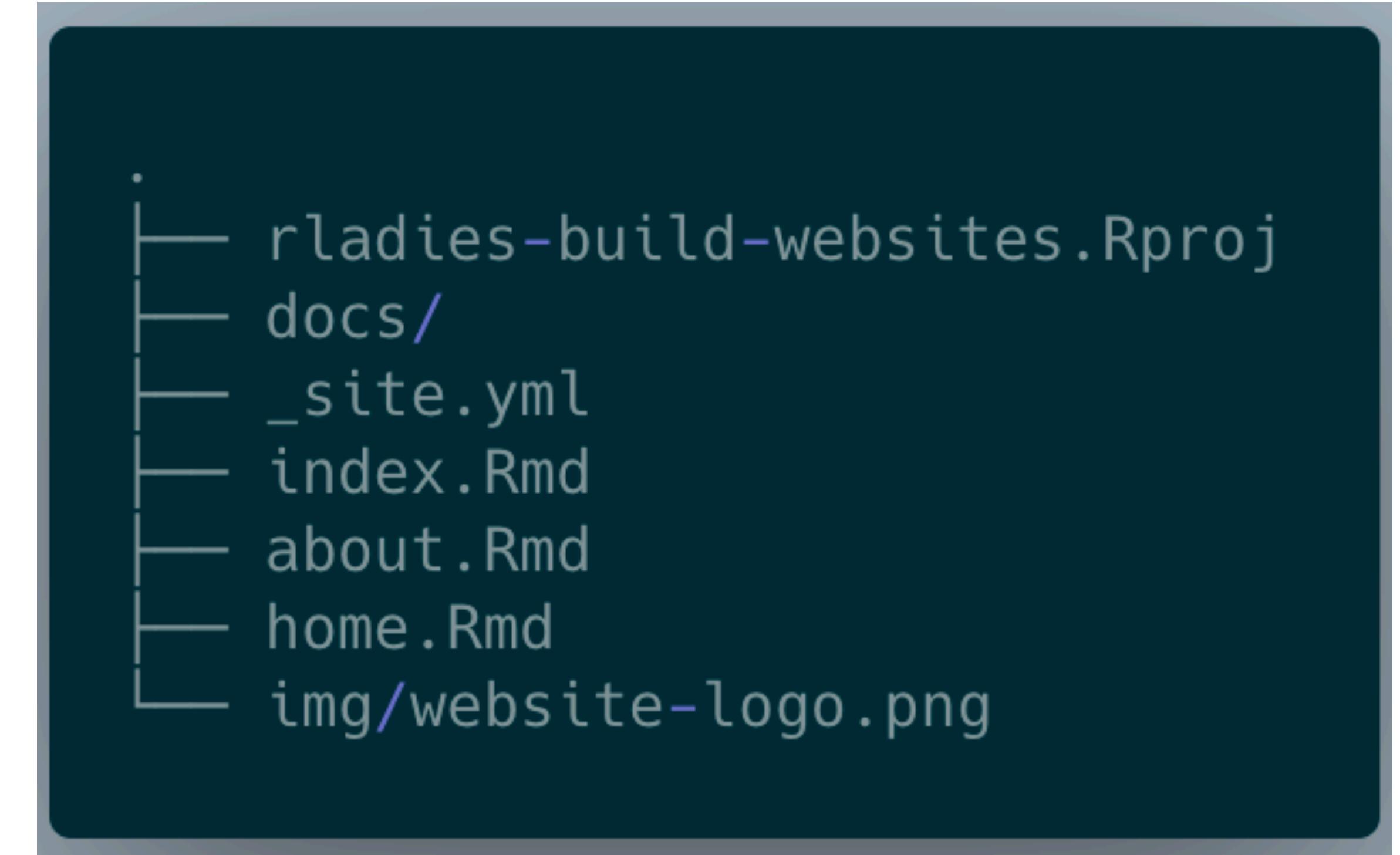
The University of California, Berkeley | Berkeley, CA
B.S. in Computer Science | September 2005 - May 2009

Update home.Rmd

YAML

```
1 ---  
2 title: "Building Websites in RStudio"  
3 image: "img/website-logo.png"  
4 links:  
5   - label: Slides  
6     url: "rladies-build-websites.pdf/"  
7   - label: Twitter  
8     url: "https://twitter.com/MT\_Statistics"  
9   - label: GitHub  
10    url: "https://github.com/matackett"  
11   - label: Email  
12     url: "mailto:maria.tackett@duke.edu"  
13 output:  
14   postcards::trestles  
15 ---
```

File structure



Update home .Rmd

Body

```
16  
17 - ## Welcome! `r emo::ji("slightly_smiling_face")`  
18  
19 Welcome! This website is a demo for the *Building Websites in RStudio*  
talk presented at [RLadies  
Amherst](https://github.com/RLadies-Amherst/RLadies-Amherst) and [RLadies  
Baltimore](https://rladies-baltimore.github.io/) in Spring 2021. The site  
includes slides and additional resources to learn more about using  
[Distill](https://rstudio.github.io/distill/) and  
[Blogdown](https://bookdown.org/yihui/blogdown/) making websites in  
RStudio.  
20  
21 - ## Resources `r emo::ji("books")`  
22  
23 - ### Distill  
24  
25 - [Distill for R Markdown](https://rstudio.github.io/distill/) by JJ  
Allaire, Rich Iannone, Alison Presmanes Hill, Yihui Xie ORCID ID  
26 - [(Re-)introducing Distill for R  
Markdown](https://blog.rstudio.com/2020/12/07/distill/) blog post by  
Alison Hill and JJ Allaire  
27 - [M-F-E-O: postcards +  
distill](https://alison.rbind.io/post/2020-12-22-postcards-distill/) blog  
post by Alison Hill  
28 - [postcards package](https://github.com/seankross/postcards#postcards)  
by Sean Kross
```

- Using Markdown syntax
- Can include inline R code and R code chunks

home.html

Building Websites in RStudio

Home About



Building Websites in RStudio

[Slides](#) [GitHub](#) [Twitter](#) [Email](#)

Welcome! 😊

Welcome! This website is a demo for the *Building Websites in RStudio* talk presented at [RLadies Amherst](#) and [RLadies Baltimore](#) in Spring 2021. The site includes slides and additional resources to learn more about using [Distill](#) and [Blogdown](#) making websites in RStudio.

Resources 📚

Distill

- [Distill for R Markdown](#) by JJ Allaire, Rich Iannone, Alison Presmanes Hill, Yihui Xie ORCID ID
- [\(Re-\)introducing Distill for R Markdown](#) blog post by Alison Hill and JJ Allaire
- [M-F-E-O: postcards + distill](#) blog post by Alison Hill
- [postcards package](#) by Sean Kross

Blogdown

- [blogdown: Creating Websites with R Markdown](#) by Yihui Xie, Amber Thomas, Alison Hill

Let's customize the page!

Create a new theme

```
#format entire website  
create_theme("my-theme")
```

my-theme.css

```
1  /* base variables */  
2  
3  /* Edit the CSS properties in this file to create a custom  
4   Distill theme. Only edit values in the right column  
5   for each row; values shown are the CSS defaults.  
6   To return any property to the default,  
7   you may set its value to: unset  
8   All rows must end with a semi-colon. */  
9  
10 /* Optional: embed custom fonts here with `@import` */  
11 /* This must remain at the top of this file. */  
12  
13  
14  
15  
16 html {  
17   /*-- Main font sizes --*/  
18   --title-size: 50px;  
19   --body-size: 1.06rem;  
20   --code-size: 14px;  
21   --aside-size: 12px;  
22   --fig-cap-size: 13px;  
23   /*-- Main font colors --*/  
24   --title-color: #000000;  
25   --header-color: rgba(0, 0, 0, 0.8);  
26   --body-color: rgba(0, 0, 0, 0.8);  
27   --aside-color: rgba(0, 0, 0, 0.6);
```

_site.yml

```
1 name: "rladies-build-website"  
2 title: "Building Websites in RStudio"  
3 description: I  
4   Building Websites in RStudio  
5 output_dir: "docs"  
6 theme: my-theme.css  
7 navbar:  
8   right:  
9     - text: "Home"  
10       href: home.html  
11     - text: "About"  
12       href: about.html  
13 output: distill::distill_article
```

Customize the theme

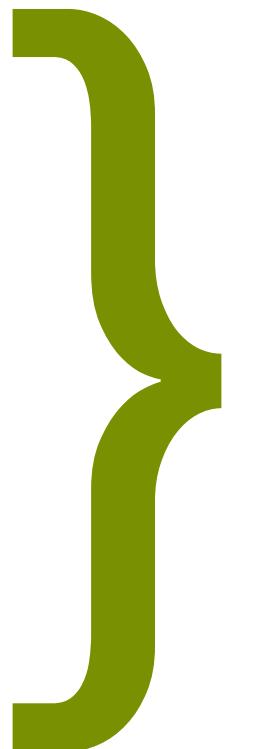
```
14 @import url('https://fonts.googleapis.com/css2?family=Open+Sans&display=swap');
15 @import url('https://fonts.googleapis.com/css2?family=Roboto+Slab&family
=Salsa&display=swap');
16 @import url('https://fonts.googleapis.com/css2?family=Salsa&display=swap');
17
18
19 html {
20   /*-- Main font sizes --*/
21   --title-size:      50px;
22   --body-size:       1.06rem;
23   --code-size:       14px;
24   --aside-size:     12px;
25   --fig-cap-size:   13px;
26
27   /*-- Main font colors --*/
28   --title-color:    #077187;
29   --header-color:   #077187;
30   --body-color:     #686868;
31   --aside-color:    #686868;
32   --fig-cap-color: #686868;
33
34   /*-- Specify custom fonts ~~~ must be imported above --*/
35   --heading-font:   "Salsa";
36   --mono-font:      monospace;
37   --body-font:       "Open Sans";
38   --navbar-font:    "Salsa"/* websites + blogs only */
```

Import Google fonts

Apply custom fonts

Customize the theme

```
14 @import url('https://fonts.googleapis.com/css2?family=Open+Sans&display=swap');
15 @import url('https://fonts.googleapis.com/css2?family=Roboto+Slab&family
16 =Salsa&display=swap');
17
18
19 html {
20   /*-- Main font sizes --*/
21   --title-size:      50px;
22   --body-size:       1.06rem;
23   --code-size:       14px;
24   --aside-size:      12px;
25   --fig-cap-size:    13px;
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30   --body-color:      #686868;
31   --aside-color:     #686868;
32   --fig-cap-color:   #686868;
33
34   /*-- Specify custom fonts ~~~ must be imported above --*/
35   --heading-font:    "Salsa";
36   --mono-font:       monospace;
37   --body-font:        "Open Sans";
38   --navbar-font:     "Salsa"/* websites + blogs only */
```



Customize font size
and font colors

[Pantone Color Picker](#)

[coolers.co](#)

Customized home .html

The screenshot shows a web page with a dark teal header and footer. The main content area has a white background. At the top left, there are two hexagonal icons: a blue one labeled 'DISTILL' with a water drop icon, and an orange one labeled 'blogdown' with an 'R' and a radio wave icon. Below these icons, the text 'Building Websites in RStudio' is displayed in a large, bold, teal font. Underneath this text is a horizontal line followed by a green oval containing four buttons: 'Slides', 'Twitter', 'GitHub', and 'Email'. The 'Slides' button is highlighted with a yellow border. To the right of the content area, there is a sidebar with a teal header. The first section is titled 'Welcome!' with a smiling emoji, followed by a paragraph of text. The second section is titled 'Resources' with a book emoji, and it contains two subsections: 'Distill' and 'Blogdown', each with a list of links.

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Blogdown

- [blogdown: Creating Websites with R Markdown](#) by Yihui Xie, Amber Thomas, Alison Hill

Really close! But how do I make the buttons colorful?

Sometimes it takes a little digging...

How do I customize
the buttons???



I can customize
the .btn class!



docs/home.html

```
1035 <li class="list-inline-item">  
1036   <a href="https://twitter.com/MT_Statistics">  
1037     <button type="button" class="btn btn-outline-dark mb-2">  
1038       Twitter  
1039     </button>  
1040   </a>  
1041 </li>
```

Sometimes it takes a little digging...

Why doesn't this code work???



Let's do some digging!



my-theme.css

```
119 .btn {  
120     background-color: #9C6B9C;  
121     color: #FFFFFF;  
122 }
```

Sometimes it takes a little digging...

Add !important tag to override button styling

Thanks internet!



my-theme.css

```
119 .btn {  
120   background-color: #9C6B9C !important;  
121   color: #FFFFFF;  
122 }
```

Let's see the updated site!

Building Websites in RStudio

More websites Example article



Building Websites in RStudio

Slides Twitter GitHub Email

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Blogdown

- [blogdown: Creating Websites with R Markdown](#) by Yihui Xie, Amber Thomas, Alison Hill

Customized page + new pages in the menu

Add an article

```
create_article("example-rmarkdown")
```

example-rmarkdown.html

```
Introduction
This is an example to show how you can easily write posts for your website using R
Markdown!

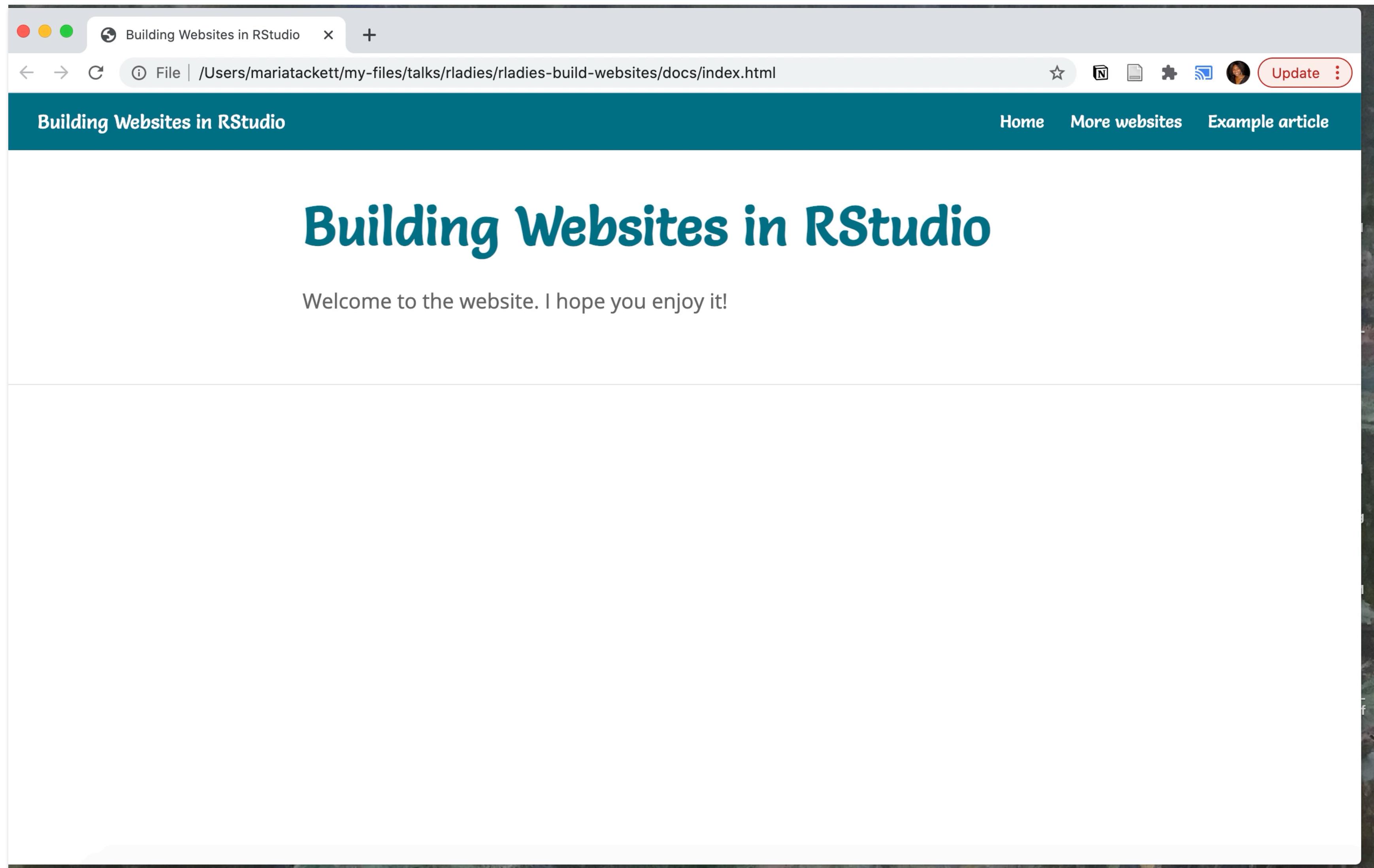
Load packages
library(tidyverse)
library(knitr)
library(broom)

Analysis
We will use the diamonds data set in the ggplot2 package. Let's take a look at the data!
diamonds %>%
  slice(1:10)
# A tibble: 10 x 10
# ... with 10 variables:
#   carat     cut      color clarity depth table price    x     y     z
#   <dbl> <ord> <ord> <dbl> <dbl> <int> <dbl> <dbl> <dbl>
1 0.23 Ideal    E     SI2    61.5  55  326  3.95  3.98  2.43
2 0.21 Premium  E     SI1    59.8  61  326  3.89  3.84  2.31
3 0.23 Good    E     VS1    56.9  65  327  4.05  4.07  2.31
4 0.290 Premium I     VS2    62.4  58  334  4.2   4.23  2.63
5 0.31 Good    J     SI2    63.3  58  335  4.34  4.35  2.75
6 0.24 Very Good J    VVS2   62.8  57  336  3.94  3.96  2.48
7 0.24 Very Good I    VVS1   62.3  57  336  3.95  3.98  2.47
8 0.26 Very Good H    SI1    61.9  55  337  4.07  4.11  2.53
9 0.22 Fair    E     VS2    65.1  61  337  3.87  3.78  2.49
10 0.23 Very Good H   VS1    59.4  61  338  4    4.05  2.39
Now let's visualize the data.
ggplot(data = diamonds, aes(x = carat, y = price, color = cut)) +
  geom_point()
```

_site.yml

```
1 name: "."
2 title: "Building Websites in RStudio"
3 description: |
4   Building Websites in RStudio
5 output_dir: "docs"
6 theme: my-theme.css
7 navbar:
8   right:
9     - text: "Home"
10    href: home.html
11    - text: "More websites"
12    href: example_websites.html
13    - text: "Example article"
14    href: example-rmarkdown.html
15 output: distill::distill_article
```

One more thing...let's change the home page



Make home.Rmd the home page

- index.Rmd is recognized as the home page in Distill
- index.Rmd needs the following in the yaml

site: distill::distill_website

```
1 -> ---  
2   title: "Building Websites in RStudio"  
3   image: "img/website-logo.png"  
4   links:  
5     - label: Slides  
6       url: "rladies-build-websites.pdf/"  
7     - label: Twitter  
8       url: "https://twitter.com/MT\_Statistics"  
9     - label: GitHub  
10    url: "https://github.com/matackett"  
11     - label: Email  
12       url: "mailto:maria.tackett@duke.edu"  
13   output:  
14     postcards::postcards  
15     site: distill::distill_website  
16 -> ---
```

Changed file name
to index.Rmd

Make home.Rmd the home page

- index.Rmd is recognized as the home page in Distill
- index.Rmd needs the following in the yaml

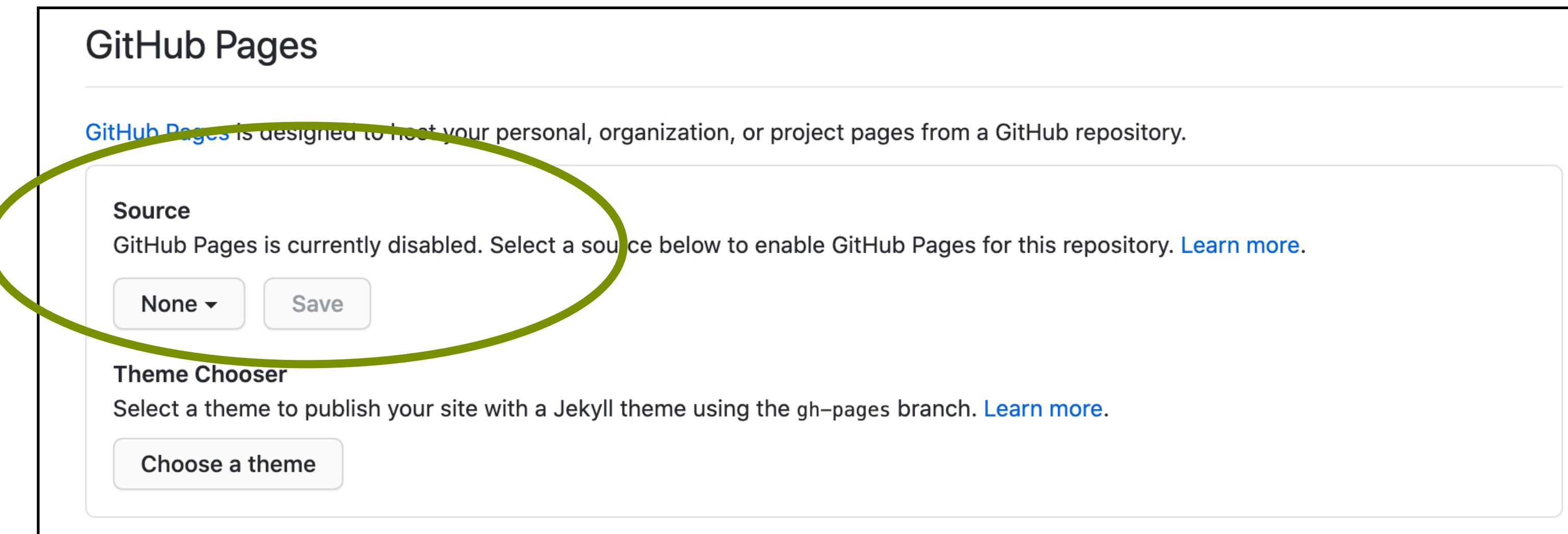
site: distill::distill_website

```
1 -> ---  
2   title: "Building Websites in RStudio"  
3   image: "img/website-logo.png"  
4   links:  
5     - label: Slides  
6       url: "rladies-build-websites.pdf/"  
7     - label: Twitter  
8       url: "https://twitter.com/MT\_Statistics"  
9     - label: GitHub  
10    url: "https://github.com/matackett"  
11     - label: Email  
12       url: "mailto:maria.tackett@duke.edu"  
13   output:  
14     postcards::postcards  
15     site: distill::distill_website  
16 -> ---
```



Let's deploy the site!

- ✓ Push all the updated files to GitHub
- ✓ In the Settings of your GitHub repo...



Choose the branch
+ folder that has
site contents

Let's deploy the site!

- ✓ Push all the updated files to GitHub
- ✓ In the Settings of your GitHub repo...

GitHub Pages

GitHub Pages is designed to host your personal, organization, or project pages from a GitHub repository.

Your site is published at <https://matackett.github.io/r ladies-build-websites/>

Source
Your GitHub Pages site is currently being built from the /docs folder in the main branch. [Learn more.](#)

Branch: main ▾ /docs ▾ Save

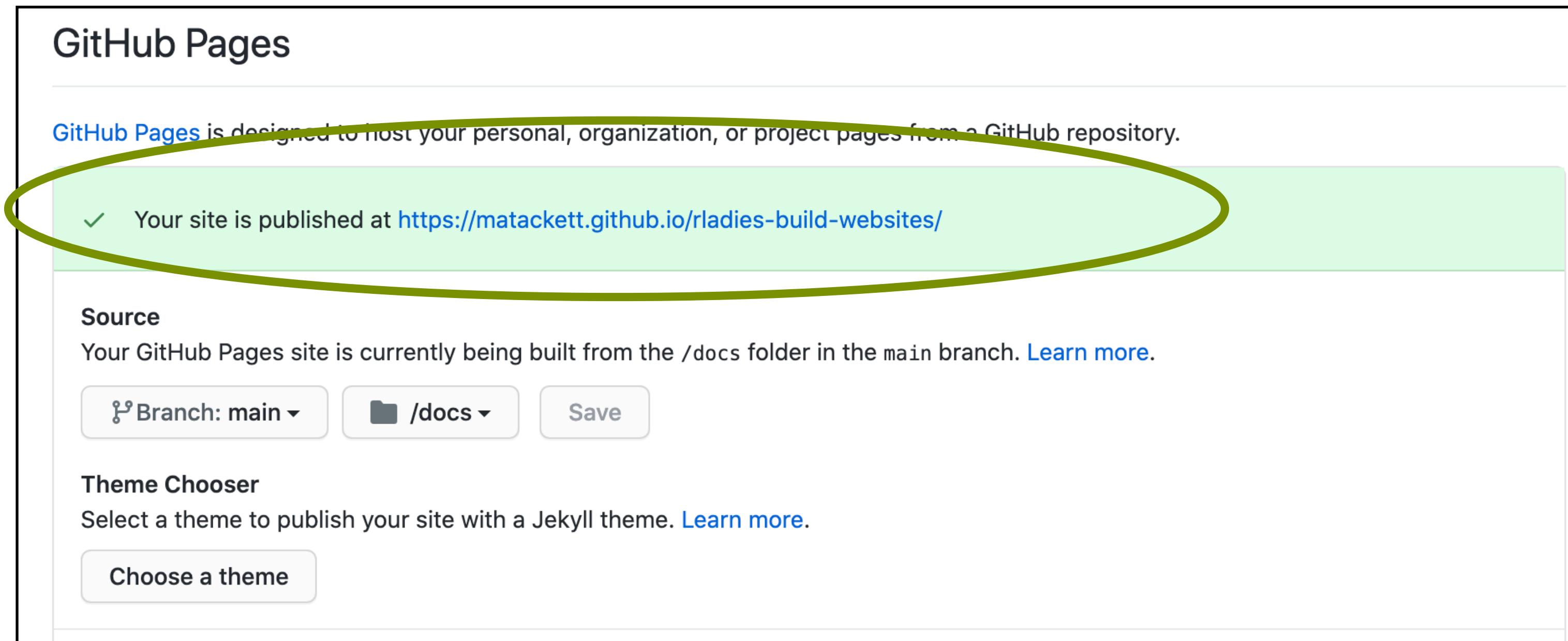
Theme Chooser
Select a theme to publish your site with a Jekyll theme. [Learn more.](#)

Choose a theme

Choose the branch
+ folder that has
site contents

Let's deploy the site!

- ✓ Push all the updated files to GitHub
- ✓ In the Settings of your GitHub repo...



URL is made from
your GitHub
username +
repo name

The finished site!

matackett.github.io/r-ladies-build-websites

Motivation

Distill +
Blogdown

Making a
website

Tips

Tips

✓ Start with a template + websites you love!

- Include these in acknowledgements on your website and/or GitHub repo for the site

✓ Make small changes and preview the site often!

✓ Keep notes + a list of useful resources

Tips

✓ Use the README of your GitHub repo for documentation

- Colors + templates
- Hugo version (if using Blogdown)
- Acknowledgements
- Resources
- etc...

✓ Keep up with what's new

✓ RStudio blog

✓ #rstats on Twitter

Resources used for this talk

- *Sharing on Short Notice* by Alison Hill and Desirée De Leon
- *M-E-F-O: postcards + distill* by Alison Hill
- *Distill for R Markdown* by JJ Allaire, Rich Iannone, Alison Hill, and Yihui Xie
- *Blogdown: Creating Websites with R Markdown* by Yihui Xie and Alison Hill

Thank You!



maria.tackett@duke.edu



[@MT_statistics](https://twitter.com/MT_statistics)



bit.ly/radies-build-websites