

# CPT in WP

Custom Post Types for  
WordPress Theme Development

# Hi, I'm Andrea

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spacer.gif

(I've been working on the web for a a long time)

“WordPress is only a  
blogging platform.”

– me, a while back

“WordPress themes and  
plugins are bloated and  
hard to work with.”

– me, not that long ago

but Custom Post Types  
have opened my eyes.

“WordPress is a great tool  
to build a custom website!”

– me, today

CPT in the wild



# Testimonials

See what our customers have to say



Dave Mulvihill, IT Project Manager  
Washington University School of Medicine

"Working with Nimblify always felt like a collaborative effort  
and never like a vendor just providing services."



<https://nimblify.com>

# Leadership listings

**forte**  
Research Systems

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ABOUT US CONTACT US

THE COMMUNITY CAREERS FORTE BUZZ

**Shree Kalluri**  
Founder, President, CEO & Chief Customer Officer

Inspired to create a company that makes a huge difference, Shree Kalluri founded Forte Research Systems, Inc. in 2000. Today, Shree continues to drive the company's strategic direction and shape the culture that makes Forte a company that people and organizations seek out and stay with. Shree takes pride in the contribution that the company's products make to the discovery of new cures through the work done at research organizations across the United States and beyond.

**100NPS**

Shree blogs about Forte's philosophy and company culture at [100nps.org](https://100nps.org).

**Recent Forte Blog Posts**

- [Working Together to Improve Clinical Research Operations](#)
- [Giving Tuesday: Helping Childhood Cancer Survivors After the Storm Has Passed](#)
- [Introducing the Forte Research Ecosystem](#)

**Carrie Nemke**  
Vice President, Business Development

<https://forteresearch.com/about/leadership>

# Why use Custom Post Types?

- Create an easier admin experience
- Develop flexible layouts
- Separate content from design
  - keep that markup out of your database.

# CPT Steps:

1. First, create your Custom Post Type
2. Next, add some data in your WordPress admin panel
3. Third, template your custom theme page to display the data

# 1. Creating Custom Post Types

...by adding code to your theme's  
functions.php

```
1  <?php
2
3  add_action( 'init', 'create_post_type' );
4  function create_post_type() {
5      register_post_type( 'acme_product', // Your Custom Post Type
6          array(
7              'labels' => array(
8                  'name' => __( 'Products' ),
9                  'singular_name' => __( 'Product' )
10             ),
11             'public' => true, // Public single page? True = yes
12             'has_archive' => true, // Post type archive listing? True = yes
13         )
14
```

## **Add CPT directly in functions.php**

[https://codex.wordpress.org/Post\\_Types#Custom\\_Post\\_Types](https://codex.wordpress.org/Post_Types#Custom_Post_Types)

```

25     register_post_type( 'wiverb_hike',
26         array(
27             'labels' => array(
28                 'name' => __( 'Hiking Trails' ),
29                 'singular_name' => __( 'Hiking Trail' ),
30                 'add_new_item' => __( 'Add New Trail' ),
31                 'edit_item' => __( 'Edit Trail' ),
32                 'new_item' => __( 'New trail' ),
33                 'view_item' => __( 'View trail' ),
34                 'search_items' => __( 'Search trails' ),
35                 'not_found' => __( 'No trails were found' ),
36                 'not_found_in_trash' => ( 'No trails found in trash' )
37             ),
38             'public' => true,
39             'show_in_menu' => true,
40             'exclude_from_search' => true,
41             'has_archive' => true,
42             'supports' => array('title', 'editor', 'thumbnail', 'revisions', 'page-attributes'),
43             'menu_icon' => 'dashicons-location-alt',
44         )
45     );

```

## More Custom Post Type Settings

[https://codex.wordpress.org/Function\\_Reference/register\\_post\\_type](https://codex.wordpress.org/Function_Reference/register_post_type)

# supports

Why rebuild the wheel when you can use built-in WP Functionality?

- **thumbnail** (Featured Image)
- **excerpt**
- **page-attributes** (To set a custom order)
- **revisions**



# menu\_icon

No more pushpins please.



<https://developer.wordpress.org/resource/dashicons>









- **Roll your own**









```
'get_template_directory_uri() . "youricon.png"'
```

- **Use a Dashicon**

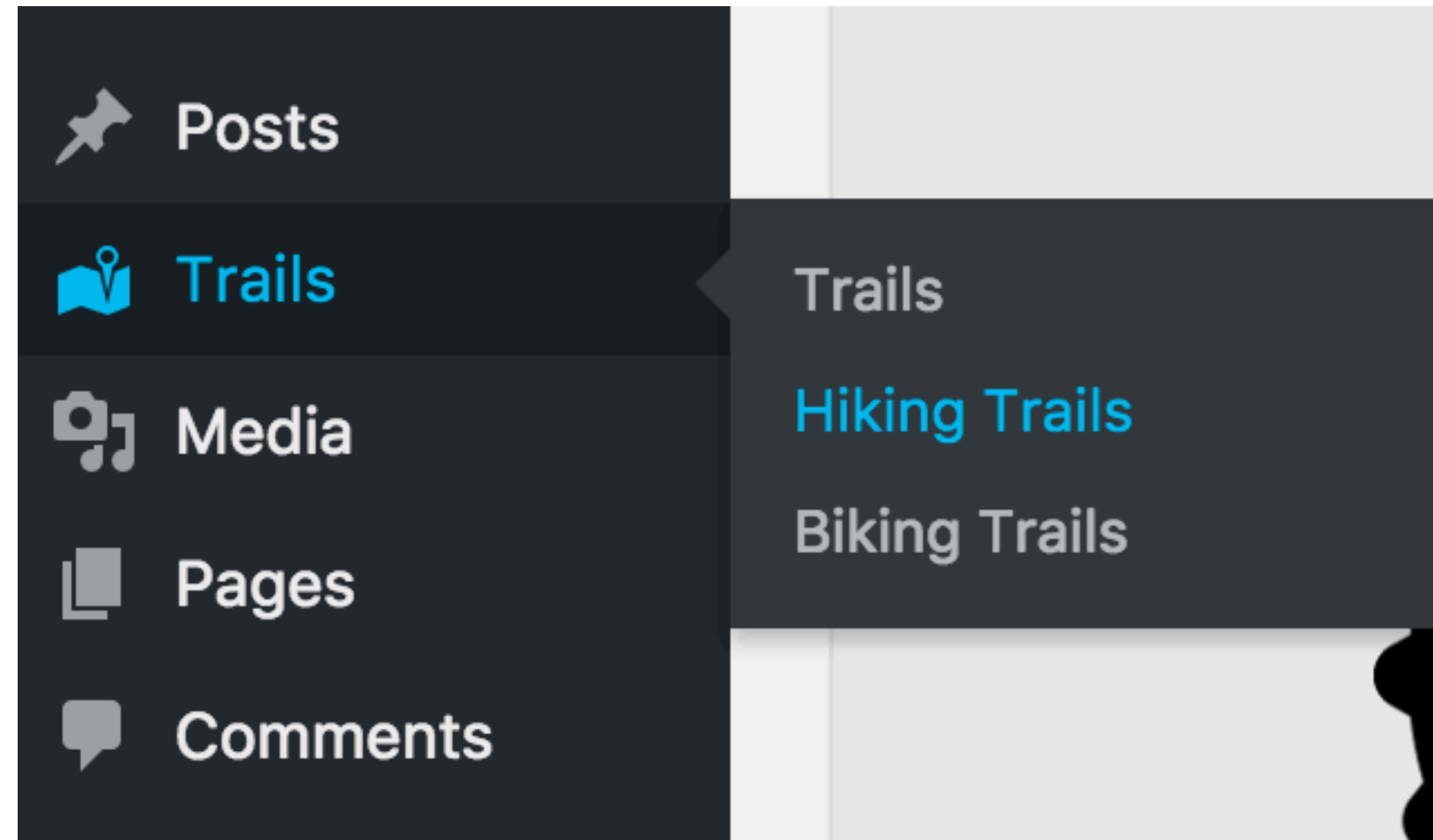
```
'menu_icon' => 'dashicons-clipboard'
```



-  Feature Request
-  Conference Sessions
-  Organizations
-  Announcements
-  Uploaded Files
-  Jasper Reports
-  Career Opportunities
-  Dashboard Top Story

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-  Conference Sessions
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What if you have lots of  
Custom Post Types?



Nesting your CPT in the Admin Panel

```
register_post_type( 'not_in_menu',  
...  
    'public' => true,  
    'has_archive' => true,  
    'show_in_menu' => false,  
...)
```

## **Nesting your CPT in the Admin Panel**

First, don't show the Post Type in the menu itself

```
76
77 if(!function_exists('wiverbs_trails_menu')) {
78     /**
79     * Adds admin nav & subnav
80     */
81     function wiverbs_trails_menu() {
82         add_menu_page( 'Trails', 'Trails', 'edit_posts', 'wiverbs_trails',
83             • 'wiverbs_trails_page', 'dashicons-location-alt', 5 );
84
85         add_submenu_page('wiverbs_trails', 'Hiking Trails', 'Hiking Trails',
86             • 'edit_posts', 'edit.php?post_type=wiverb_hike');
87
88         add_submenu_page('wiverbs_trails', 'Biking Trails', 'Biking Trails',
89             • 'edit_posts', 'edit.php?post_type=wiverb_bike');
90     }
91     add_action( 'admin_menu', 'wiverbs_trails_menu' );
92 }
93 }
```

## **Nesting your CPT in the Admin Panel**

[https://codex.wordpress.org/Administration\\_Menus](https://codex.wordpress.org/Administration_Menus)

```

91  if(!function_exists('wiverbs_trails_page')) {
92      /**
93       * Add content to the admin trails top-level page
94       */
95      function wiverbs_trails_page() {
96          if ( !current_user_can( 'edit_posts' ) ) {
97              wp_die( __( 'You do not have sufficient permissions to access this page.' ) );
98          }
99          echo '<div class="wrap">';
100         echo '<h2>Trails</h2><p>Edit trails by selecting from the list below';
101         echo '<ul>';
102         echo '<li><a href="'. home_url()
103         • './wp-admin/edit.php?post_type=wiverb_hike">Hiking Trails</a></li>';
104         echo '<li><a href="'. home_url()
105         • './wp-admin/edit.php?post_type=wiverb_bike">Biking Trails</a></li>';
106         echo '</ul>';
107         echo '</div>';
108     }
109 }

```

## **Nesting your CPT in the Admin Panel**

[https://codex.wordpress.org/Administration\\_Menus](https://codex.wordpress.org/Administration_Menus)

# Custom Subdirectories

```
'rewrite' => array( 'slug' => 'trails/hiking' ),
```

```
'has_archive' => 'trails/hiking'
```

**Remember to flush/rebuild your permalinks after this change.**

Do so manually or by adding a flush to your theme or plugin activation  
[https://codex.wordpress.org/Function\\_Reference/flush\\_rewrite\\_rules](https://codex.wordpress.org/Function_Reference/flush_rewrite_rules)



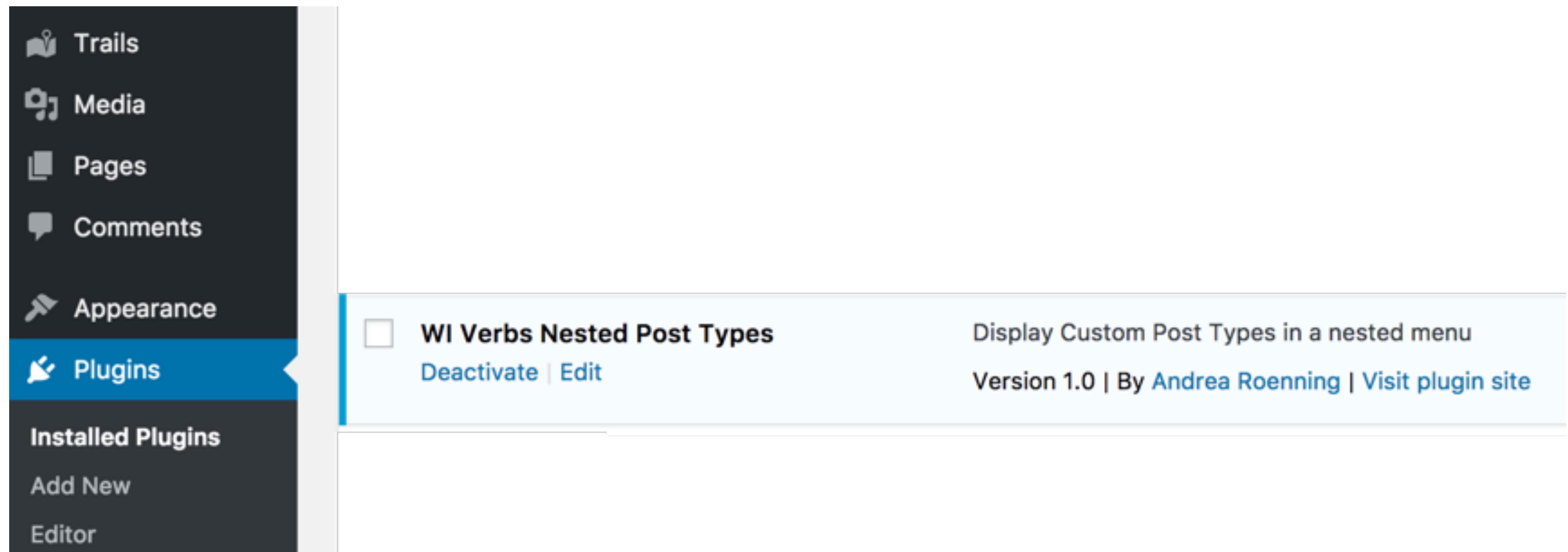
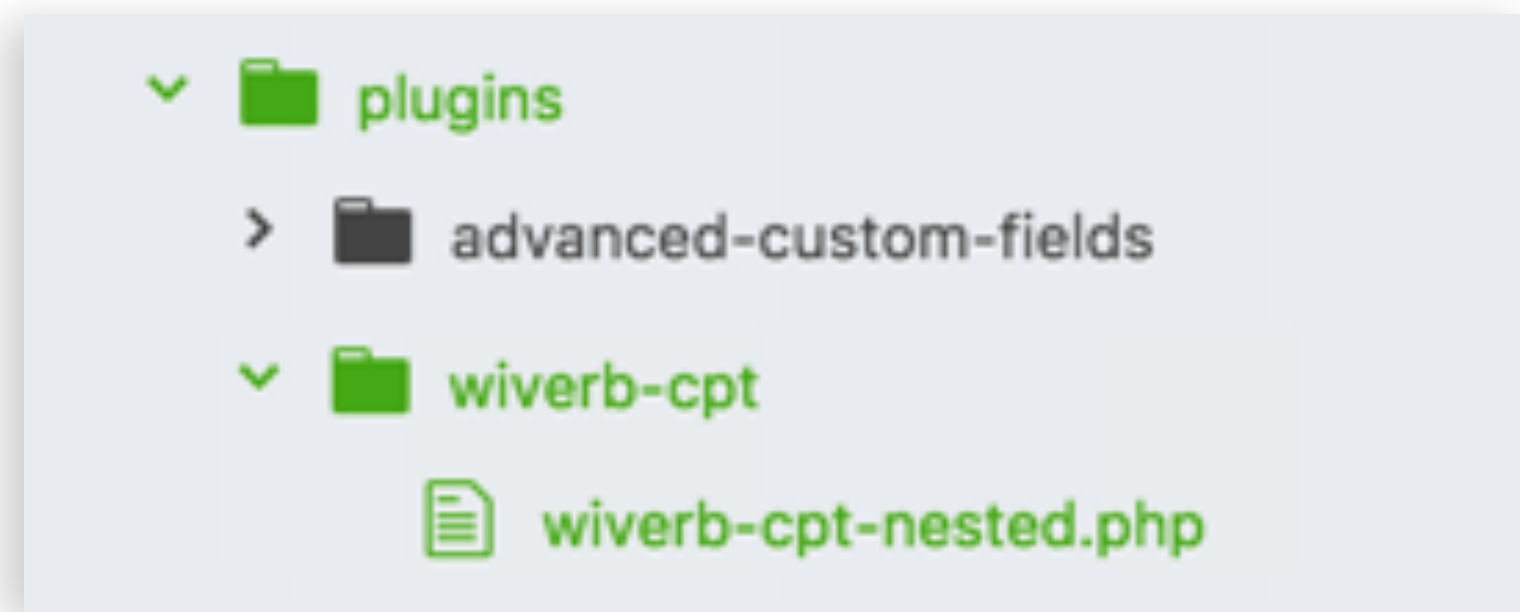
But what if you change themes?

# 1. Creating Custom Post Types

..you could build your CPT code into a custom plugin.

example plugin gist on GitHub

[bit.ly/wi-verbs-cpt](https://bit.ly/wi-verbs-cpt)



## Creating CPT Manually: Create a Plugin

<https://developer.wordpress.org/plugins/the-basics/header-requirements/>

# 1. Creating Custom Post Types

..you could use a third party Custom Post Type management plugin.

My Pick: CPT UI

<https://wordpress.org/plugins/custom-post-type-ui>

Dashboard

Jetpack

Posts

Media

Forms

Pages

Comments

Quotes

Sessions

Appearance

Plugins

Users

Tools

Settings

Custom Fields

SEO

CPT UI

Add/Edit Post Types

Add/Edit Taxonomies

Registered

## Add/Edit Post Types

Add New Post Type

Edit Post Types

View Post Types

Import/Export Post Types

### Basic settings

Post Type Slug \*

The post type name/slug. Used for various queries for post type content.

Slugs should only contain alphanumeric, latin characters. Underscores should be used in place of spaces. Set "Custom Rewrite Slug" field to make slug use dashes for URLs.

Plural Label \*

(e.g. Movies)

Used for the post type admin menu item.

Singular Label \*

(e.g. Movie)

Used when a singular label is needed.

Add Post Type

### Additional labels

Post Type Description

Dashboard

Jetpack

Posts

Media

Forms

Pages

Comments

Quotes

Sessions

Appearance

Plugins

Users

Tools

Settings

Custom Fields

SEO

CPT UI

Add/Edit Post Types

Add/Edit Taxonomies

### Menu Position

See [Available options](#) in the "menu\_position" section. Range of 5-100

The position in the menu order the post type should appear. `show_in_menu` must be true.

### Show in Menu

"Show UI" must be "true". If an existing top level page such as "tools.php" is indicated for second input, post type will be sub menu of that.

True (default: true) Whether or not to show the post type in the admin menu and where to show that menu.

The top-level admin menu page file name for which the post type should be in the sub menu of.

### Menu Icon

Image URL or Dashicon class name to use for icon. Custom image should be 20px by 20px.

### Supports

Add support for various available post editor features on the right. A checked value means the post type means the feature is supported.

Use the "None" option to explicitly set "supports" to false.

- Title
- Editor
- Featured Image
- Excerpt
- Trackbacks
- Custom Fields
- Comments

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- Dashboard
- Jetpack
- Posts
- Trails
- Media
- Pages
- Comments
- Appearance
- Plugins
- Users
- Tools
- Settings
- Custom Fields
- Instagram Feed
- Collapse menu

## Edit Trail [Add New](#)

Screen Options ▾

# Pheasant Branch Conservancy

Permalink: <http://localhost/WisconsinVerbs/trails/hiking/pheasant-branch-conservancy/> [Edit](#)

[Add Media](#)

Visual Text

- b**
- i*
- [link](#)
- b-quote
- del
- ins
- img
- ul
- ol
- li
- code
- more
- close tags
- 🔍
- 🔗

`<p>The 550-acre conservancy protects Pheasant Branch Creek, which supplies Lake Mendota with 1,800 gallons of crystal-clear water every minute. Visitors will find nature trails running throughout this oasis of pristine woods and wetlands.</p>`

Word count: 32 Last edited by Andrea Roenning on June 24, 2017 at 11:55 am

## Publish [▲](#)

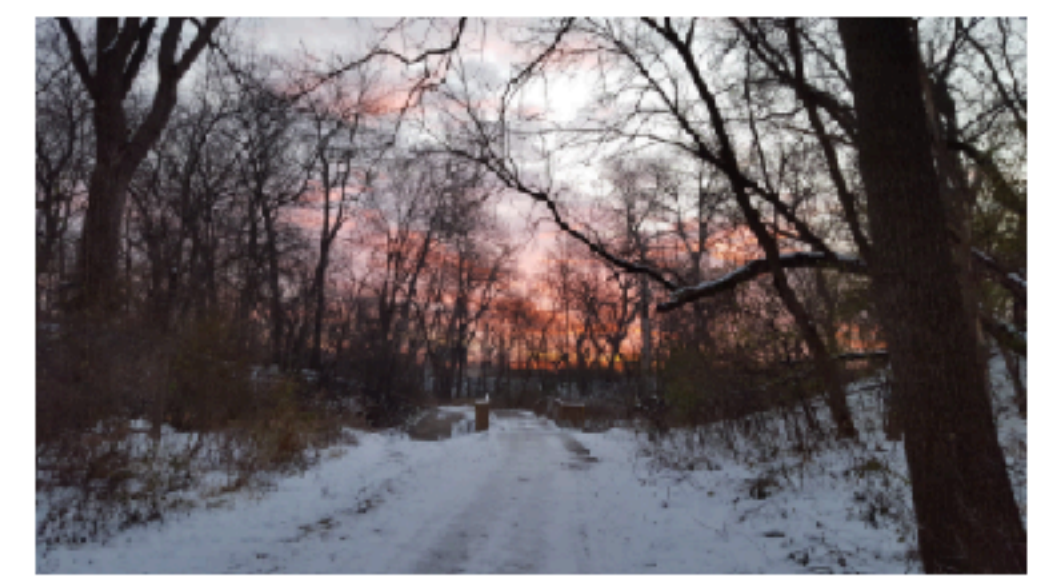
[Preview Changes](#)

- 📍 Status: **Published** [Edit](#)
- 👁 Visibility: **Public** [Edit](#)
- 📅 Published on: **Jun 24, 2017 @ 11:55** [Edit](#)

[Move to Trash](#) [Update](#)

## Post Attributes ▾

## Featured Image ▲



*Click the image to edit or update*

What if you want more fields than  
WordPress's title & description?

# Custom Fields

- Roll your own:  
[https://codex.wordpress.org/Custom\\_Fields](https://codex.wordpress.org/Custom_Fields)
- Advanced Custom Fields Plugin (ACF)  
<https://www.advancedcustomfields.com>

Wisconsin Verbs 0 + New Delete Cache

- Dashboard
- Jetpack
- Posts
- Trails
- Media
- Pages
- Comments
- Appearance
- Plugins
- Users
- Tools
- Settings
- Custom Fields**
- Custom Fields
- Export
- Add-ons

## Add New Field Group

Trail Fields

Field Order	Field Label	Field Name	Field Type
1	Trail Link	trail_link	Text

**Field Label \***  
This is the name which will appear on the EDIT page

Trail Link

**Field Name \***  
Single word, no spaces. Underscores and dashes allowed

trail\_link

**Field Type \***

Text

**Field Instructions**  
Instructions for authors. Shown when submitting data

URL for Trail Webpage

# ACF Plugin

Edit Trail

[Add New](#)


Pheasant Branch Conservancy

Permalink: <http://localhost/WisconsinVerbs/trails/hiking/pheasant-branch-conservancy/>

[Edit](#)

**Trail Link**

URL for Trail Webpage

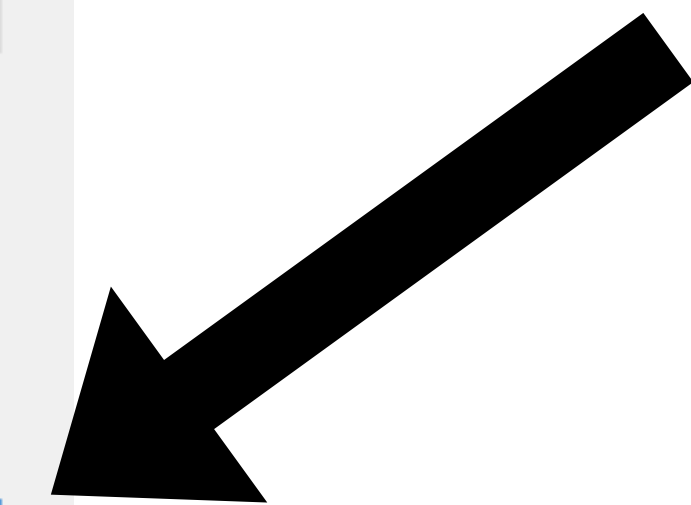
 Add Media

Visual

Text

- b**
- i*
- link
- b-quote
- ~~del~~
- ins
- img
- ul
- ol
- li
- code
- more
- close tags
- ¶
- 

`<p>The 550-acre conservancy protects Pheasant Branch Creek, which supplies Lake Mendota with 1,800 gallons of crystal-clear water every minute. Visitors will find nature trails running throughout this oasis of pristine woods and wetlands.</p>`



# ACF Plugin

\*This just scratches the surface  
of developing themes using  
custom fields.

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# WordPress Template Hierarchy

If your CPT is set 'public' => true, your content will display on one of your default WordPress template pages such as index.php or single.php

<https://developer.wordpress.org/themes/basics/template-hierarchy>



# WordPress Template Hierarchy

<https://developer.wordpress.org/themes/basics/template-hierarchy>



# WordPress Template Hierarchy

This is easily overridden by creating a `single-your_post_type.php` page.

The same concept applies for your archive page.

<https://developer.wordpress.org/themes/basics/template-hierarchy>



## Hiking Trail: Pheasant Branch Conservancy

The 550-acre conservancy protects Pheasant Branch Creek, which supplies Lake Mendota with 1,800 gallons of crystal-clear water every minute. Visitors will find nature trails running throughout this oasis of pristine woods and wetlands.



[More Hiking Trails](#)

```
get_post_type_archive_link( 'wiverb_hike' );
```

Using `single-wiverb_hike.php` to display `wiverb_hike` CPT

```
1  <?php get_header(); ?>
2  <div class="container">
3    <div class="row">
4      <div class="col-xs-12 blog-post-single add-btm-margin">
5        <?php if (have_posts()) : while (have_posts()) : the_post(); ?>
6          <section <?php post_class() ?> id="post-<?php the_ID(); ?>">
7            <div class="row">
8              <div class="col-md-6">
9                <h1>Hiking Trail: <?php the_title(); ?></h1>
10               <?php the_content(); ?>
11             </div>
12             <div class="col-md-6">
13               <?php
14               if ( has_post_thumbnail() ) { ?>
15                 <a href="<?php the_permalink(); ?>"> <?php the_post_thumbnail('medium'); ?></a>
16               <?php } ?>
17             </div>
18             <div class="col-xs-12">
19               <p><a href="<?php echo get_post_type_archive_link( 'wiverb_hike' ); ?>">
20                 More Hiking Trails
21               </a></p>
22             </div>
23           </div>
24         </section>
25       <?php endwhile; endif; ?>
26     </div>
27   </div>
28 </div>
29 <?php get_footer(); ?>
30
```



## HIKING TRAILS



**[Pheasant Branch Conservancy](#)**



**[Indian Lake County Park](#)**

Using `archive-wiverb_hike.php`

# Querying Custom Post Types in a Page

If you want to display data from your Custom Post Types on a WordPress page, you can create a second WP\_Query call and loop through it.

Loop Example

[https://codex.wordpress.org/Post\\_Types#Querying\\_by\\_Post\\_Type](https://codex.wordpress.org/Post_Types#Querying_by_Post_Type)

Setting Parameters

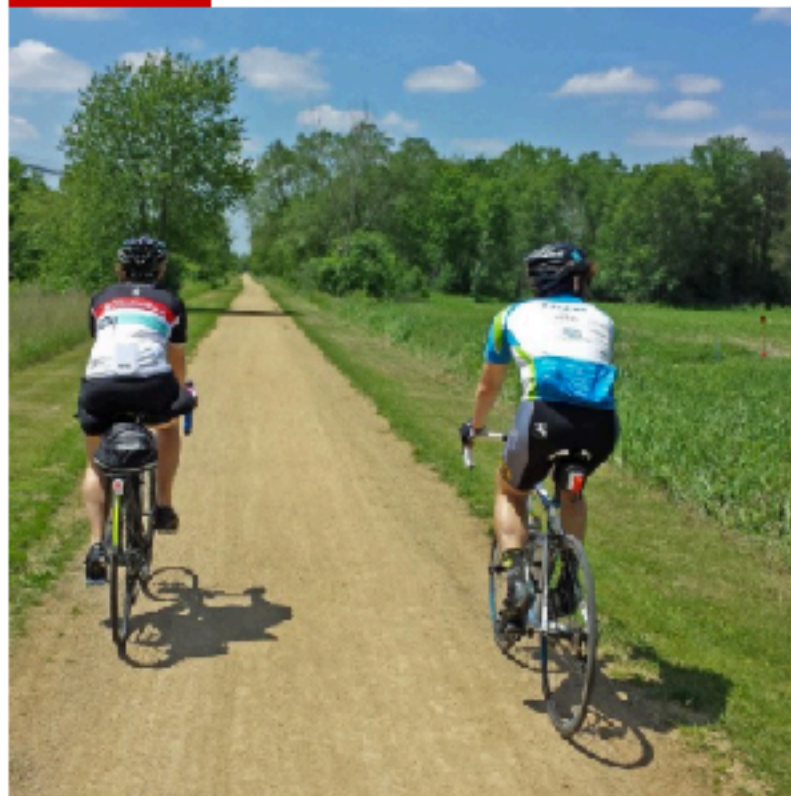
[https://codex.wordpress.org/Class\\_Reference/WP\\_Query#Multiple\\_Loops](https://codex.wordpress.org/Class_Reference/WP_Query#Multiple_Loops)



# TRAILS

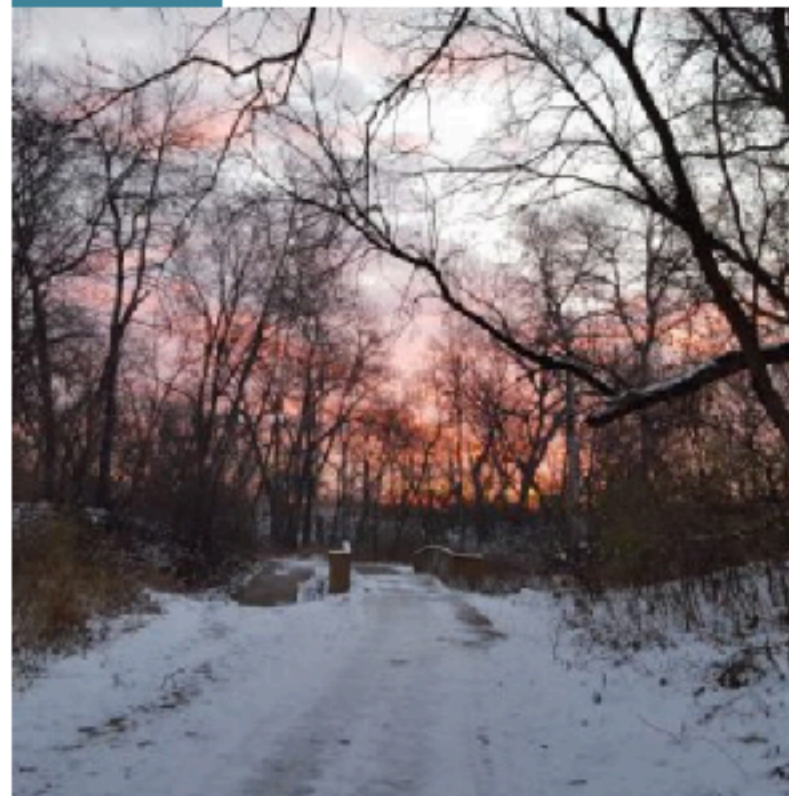
There are many great trails to check out in this area.

Bike



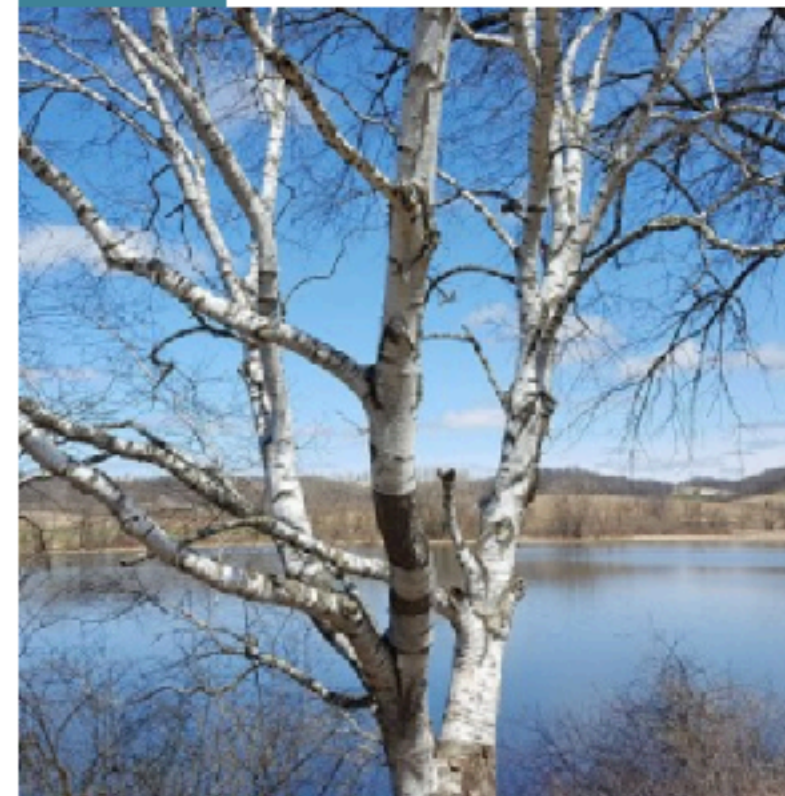
[Badger State Trail](#)

Hike



[Pheasant Branch Conservancy](#)

Hike



[Indian Lake County Park](#)

Using `template-trails.php`

```
1  <?php
2  /*
3   **Template Name: Trails Template
4   */
5  ?>
6
7  <?php get_header(); ?>
8  <div class="title-bg hero-title-bg">
9     <div class="container">
10     <div class="row">
11         <div class="archive-leader col-sm-12">
12             <h1><?php wp_title( ' ' ); ?></h1>
13         </div>
14     </div>
15 </div>
16 </div>
17 <div class="container">
18     <div class="row">
19         <div class="col-md-8">
20             <div class="page-content">
21                 <?php if ( have_posts() ) : while ( have_posts() ): the_post();
22                     // Display page content as intro
23                 ?>
24                 <?php the_content(); ?>
25                 <?php endwhile; endif; ?>
26                 <? wp_reset_postdata(); ?>
27             </div>
28         </div>
29 </div>
```



```
30
31 <?php
32 // Second query to display hiking and biking trails
33 $args = array( 'post_type' => array('wiverb_hike', 'wiverb_bike'), 'posts_per_page' => '6',
34   • 'orderby' => 'title', 'order' => 'asc' );
35
36 $query2 = new WP_Query( $args );
37
38 if ( $query2->have_posts() ) { ?>
39 <div class="row">
40 <?php while ( $query2->have_posts() ) {
41   $query2->the_post();
42   $postType = get_post_type(get_the_ID());
43   switch($postType){
44     case 'wiverb_hike':
45       $postTypeText = 'Hike';
46       $postTypeClass = 'bg-blue';
47       break;
48     case 'wiverb_bike':
49       $postTypeText = 'Bike';
50       $postTypeClass = 'bg-red';
51       break;
52   } ?>
53 <div class="col-sm-3">
54   <div class="trl-tag <?php echo $postTypeClass ?>"><?php echo $postTypeText; ?></div>
55   <div><a href="<?php echo get_the_permalink($query2->post->ID);?>">
56     <?php echo get_the_post_thumbnail($query2->post->ID, 'thumbnail') ?>
57   </a></div>
58   <div class="trl-link"><a href="<?php echo get_the_permalink($query2->post->ID);?>">
59     <?php echo get_the_title($query2->post->ID); ?>
60   </a></div>
61 </div>
62 <?php } //End While
63 wp_reset_postdata(); ?>
64 </div>
65 <?php } //End if ?>
66 </div>
67 <?php get_footer(); ?>
```

..you could make a shortcode to display your CPT content on multiple pages

```
[template part="template-part-hello"]
```

<https://github.com/halfempty/template-part-shortcode>

# So, to recap

1. First, create your Custom Post Type

- Use the theme's `functions.php`
- Custom Plugin
- Third Party Plugin

2. Next, add some data in your WordPress admin panel

- This is the easy part

3. Third, template your custom theme page to display the data

- Create a custom single or archive page
- Use a second `WP_Query` call
- Consider using a shortcode for easy access to your content

# Wisconsin Verbs theme from this talk

(Pardon the sandbox)

Theme

<https://github.com/andreawetzel/WisconsinVerbsThemeV01>

Plugin

[bit.ly/wi-verbs-cpt](http://bit.ly/wi-verbs-cpt)

<http://wisconsinverbs.com>