

Welcome to unit two of Writing in the Sciences. I went to put that back into the active voice and I realized that I needed to specify who had immune dysfunction. So in the active voice we could just say "We could observe the spectrum of the electron beams by applying a high resolution, 90 degree bending magnet downstream of the laser electron interaction region". It's much easier to read that in the active voice. Here's another example. In the passive voice it reads "Increased promoter occupancy and transcriptional activation of p21 and other target genes were observed". Then to turn it back to the active voice, you ask yourself the question, "Who does what to whom?". Who did the action and who had the action done to them? We're gonna practice this. So, here's an example of a passive voice sentence that we can turn back into the active voice. It says "By applying a high resolution, 90 degree bending magnet downstream of the laser electron interaction region, the spectrum, spectrum of the electron beams could be observed". or "The president made mistakes.". This is a natural way to talk and write. You'll see in a minute if you change to the passive voice it sounds very awkward. In the active voice the person or thing doing the action, what I'm gonna call the agent, comes before the verb. And the thing being acted upon, what I'm gonna call the recipient of the verb for lack of better terminology, that comes after the verb. So here, she is the person throwing the ball so she is the agent. She's doing the throwing. The ball is the recipient of the action. It's the thing being thrown, so I'll call that the recipient. In Martha will drive the car, Martha is the agent and the car is the recipient. The passive voice inverts the structure. The recipient of the verb, the thing that's acted upon, is moved before the verb and the agent, the person or thing doing the action, is moved after the verb or omitted altogether. So instead of agent, verb, recipient, we get recipient, verb, agent. So instead of she throws the ball you get the ball is thrown by her or instead of the Martha drive will drive the car you get the car will be driven by Martha. You can see how the passive voice is awkward and difficult to read. It's not the way we talk. In a passive voice we may also choose to drop the agent altogether. For example, we can drop the president out of this sentence. Mistakes were made and we come up with the classic passive voice sentence. Mistakes were made. They just happened out of thin air. It's nobody's fault, they just happened. Okay. What are the reasons the passive voice exists in the English language is that it is a way to abdicate responsibility. It's a way to avoid claiming responsibility for your actions. How can you recognize the passive voice? You're gonna look for a passive verb and a passive verb has two parts to it. It always has a form of the verb to be, that is "is", "are", "was", "were", "be", "did" or "am". So we could say, "We observed increased promoter occupancy and transcriptional activation of p21 and other target genes." Just a small change to the sentence makes it so much easier to read. Here's another example, "The activation of calcium channels is induced by the depletion of endoplasmic reticulum calcium stores". We can just instead say "activates depleting calcium from the end of plasma reticulum activates calcium channels". That's one of the nice things about the active voice. It helps you cut extra words and forces you to be more direct. Another example, "Additionally, it was found that pre-treatment with antibiotics increased the number of super-shedders, while immunosuppression did not". We realize that we can just say "Use of the passive voice strongly correlated with other sins of writing". That's a much crisper and easier to read version. Finally, the active voice often gets rid of ambiguity because it forces you to be more direct. I was editing this sentence for a student, "General dysfunction of the immune system at the leukocyte level is suggested by both animal

and human studies". Notice again we've got the passive verb "were designed" and what was designed was the cigarette ads. But who designed them? Well, when you read it in the passive voice it's like it just happened. They were just designed that way. It wasn't intentional. Nobody's responsible. You can see why people might want to use the passive voice in some cases since it takes out the responsible party. Well, contrast that passive voice sentence to the active voice version which would be something like "we designed the cigarette ads to appeal especially to children". So you would say, "The depletion of those calcium stores induces the activation of calcium channels." But, in fact, when you turn this into the active voice you realize that you can actually get rid of a few extra words here. We don't need to say that "the depletion induces the activation of". The sentence says "No attempt was made to contact non-responders because they were deemed unimportant to the analysis". Here we actually have two passive verbs, right, "was made" and "were deemed". I've already shown you numerous examples of how the active voice improves readability but here's one more. The active voice follows the format "subject, verb, object". This is the way we normally talk. We say "She throws the ball. You can see how funny this sentence is in the passive voice, how awkward it is. Yet, unfortunately, a lot of the scientific and academic literature reads this way.". However you can be even more direct here. You can drop "that it was found" or the "we found" all together and just state directly "pre-treating the mice with antibiotics increased the number of super-shedders while immunosuppression did not". I took this sentence from the classic writing book "The Elements of Style" by Strunk and White. If you want to pick up something else to read in this course that book is highly recommended and it's also available online for free. They give the sentence "My first visit to Boston will always be remembered by me". The activation of the channels is the effect and the depletion of the calcium stores is the cause. By now you've probably guessed some of the advantages of the active voice, but I'm gonna tell you three key reasons why I prefer the active voice. Two, it improves readability and three, it reduces ambiguity. "We did not attempt to contact non-responders because we deemed them unimportant to the analysis". It's more transparent that these decisions involved human judgement and thus might be fallible. The passive version says "A strong correlation was found between use of the passive voice and other sins of writing." Now, we could rewrite that as "We found a strong correlation between use of the passive voice and other sins of writing". I'm Kristin Sainani from Stanford University. This week we're gonna review the latter two principles, both of which had to do with verbs. This means using strong verbs, avoiding turning verbs into nouns, and keeping the subject of your sentence and the main verb close together at the beginning of the sentence. But if you say she runs, like the athletic activity of running, there's no way to turn that into the passive voice because run doesn't take an object here. It starts with the "what was remembered" when I'm calling the recipient of the action. What was remembered? The visit was remembered. And then you get to the passive verb. And you can recognize the passive verb because you have a form of the verb "to be", the "will be" and the past tense of a verb that takes an object, "be remembered". You can recognize the passive verb here again because we have a "to be" verb "is" and then we have "loved" which is the past tense of love and love is certainly a verb that takes an object. You usually love something. So that's our passive verb. And then we have the recipient of the love, the object of the love. That's the "she", she's not the person doing the loving, she's the one being loved. You can see that this is

in the passive voice because we know what was observed but we don't know who did the observing. We've got "could be" which is your "to be" verb. And then we've got "observed" which is the past tense of a verb that takes an object. It seems to be a foregone conclusion that they are unimportant to the analysis, of course we did it that way. When you put it in the active voice it properly places more emphasis on the role of the authors in these decisions. Last week, I gave you an overview of three key principles of effective writing. In this first module, I'm gonna focus on the active voice. It's what we call a transitive verb. It has to take an object where there's no way to invert it into the passive voice. So when you say she throws the ball, the verb throws takes the object ball. A passive verb always has a to be verb. So just to remind you of the to be verbs, that's "is", "are", "was", "were", "be", "did" and "am". And sometimes you may see another form that has a "be" or a "been" with it, such as could be or shall be or should be. Looking for these will help you to recognize passive verbs. You can recognize this as the passive voice because it starts with the object of the verb. You're gonna have agent, verb, recipient rather than recipient, verb, agent. This is an example of a passive voice sentence where the agent has been completely removed, leaving some intrigue. Here is another example of a passive voice sentence in which the agent has been omitted from the sentence. So how do you turn the passive back to the active? You can also recognize the passive verb. Presumably the agent is the authors of the paper this sentence came from. So presumably that's again the authors of the papers. Now this one is a bit more subtle but you can see that it's in the passive voice because cause and effect are inverted here. One, it emphasizes author responsibility. And I'll give examples of each of these. First of all, it emphasizes author responsibility. When you read the passive version it seems like the decision about non-responders was kind of handed down from on high as if there was no other choice. I had to add a word so when I put this in the active voice I had to add the word diabetics. And we went over the first of those which was cutting clutter from your writing. First, I'm gonna show you how to use the active voice in your writing. Then I'm going to talk about writing with verbs. First of all, what is the active voice? And that it has a main verb that's going to be in the past tense and that main verb has to take an object. Of course if you say she runs the company then runs takes the object company and you can turn that into the passive voice by saying the company is run by her. Here's an example of a passive voice sentence. You can hear how awkward and funny sounding that is. Right? To turn that back into the active voice you're gonna flip it around. This is an example of a passive voice sentence in which there is no agent. Okay? "Cigarette ads were designed to appeal especially to children". You can see that when you turn things to the active voice it forces you to call out the responsible party. First, you have to recognize when the sentence is in the passive voice. To turn this one back to the active voice, we have to add an agent. Who did the observing? To turn that into the active voice. So to turn this into the active voice you want to put the cause before the effect. That's very wordy. When you turn things into the active voice you realize that you can be more direct. When you put it into the active voice, it's a little different. And I think it's important that we keep our focus on the fact that authors, humans were involved. I think that's a, slightly better but we can do even better than that because when we put things in the active voice, again, it often leads us to be more direct. That's the passive version.", or "Martha will drive the car." And then you get to the agent, the person doing the remembering, that's at the end of the sentence. So you would say, I will always

remember my first visit to Boston. That's a much more natural way to speak. Here's another example, it says "she is loved". Which of course brings up all sorts of interesting questions like "Who is loving her?". But in this sentence the person doing the loving, the agent, remains a mystery. So here's an example.