3:59 Betsy Mitchell: Hi, I'm Betsy Mitchell, editor in chief of Del Rey, and thanks for attending our very first Master Class session. Our panelists today will be talking about the art of research in writing. Please welcome Elizabeth Moon and Jack Campbell!

4:00 Betsy Mitchell: Former Marine Elizabeth Moon is the author of many novels, including Victory Conditions, Command Decision, Engaging the Enemy, Marque and Reprisal, Trading in Danger, the Nebula Award winner The Speed of Dark, and Remnant Population, a Hugo Award finalist. After earning a degree in history from Rice University, Moon went on to obtain a degree in biology from the University of Texas, Austin. She lives in Florence, Texas.

4:00 Betsy Mitchell: John G. Hemry is the author, under the pen name Jack Campbell, of the New York Times and USA Today national bestselling Lost Fleet series (Dauntless, Fearless, Courageous, Valiant, Relentless, and coming in April, 2010, Victorious). Under his own name, John is also the author of the JAG in Space series and the Stark's War series, as well as a variety of short fiction. John had the opportunity to live on Midway Island during the 1960s. After attending the U.S. Naval Academy, he served in a variety of jobs, including gunnery officer and navigator on a destroyer, with an amphibious squadron, at the Navy's anti-terrorism center, and in a number of intelligence assignments.

4:00 Betsy Mitchell:
4:00 [Comment From Harvey B.: ] Hi Elizabeth and Jack!!

4:00 Elizabeth Moon: Hi, I'm here and happy to be so...thanks to Suvudu for hosting this conversation!

4:01 Jack Campbell: Hi to everyone

4:01 [Comment From danparsons: ] Hey you two!

4:01 [Comment From AnNa_wRiTeS: ] Heeeelllllooo!!!!

4:01 Elizabeth Moon: Look—we have company!

4:01 Betsy Mitchell: Let's get started on our discussion, shall we? And we're here to talk about research. Which comes first, research or writing? Is it possible for an author to get so mired in research that they never actually start writing?

4:02 Elizabeth Moon: For me, the two alternate...research comes first if I know I need something at the start of a book or story—writing comes first if I don't.

4:03 Jack Campbell: All kinds of things can keep an author from actually starting writing (or finishing writing). For me, research comes before, during and after. I read, go to movies, try to expose myself to all kinds of things because you never know what you'll need for the next book.

4:03 Elizabeth Moon: Sometimes it's obvious that I don't know what I need to know—the story "Traditions," for instance, required knowledge of Royal Navy ships in WWI and I was bone ignorant.

4:03 Elizabeth Moon: In other stories—such as "Horse of Her Dreams"—I already had familiarity with both horses and small towns in central Texas.

4:04 Jack Campbell: After I wrote a time travel story in which the main character meets Shakespeare, the editor of Analog made me research the dialogue to ensure it was absolutely correct Elizabethan grammar.

4:04 Elizabeth Moon: But if I find myself delaying starting a project to gather just one more fact—it's time to sit down and write story-stuff.

4:04 [Comment From Matthew Dyer: ] How do you mix the two? That is, how do you keep your research fresh and in mind while writing?
Elizabeth Moon: Matthew, I often delay starting a section of research until I need it—something technical, for instance—and then the notes made while doing the research are fresh. For the rest, I’m nearly always reading one of my research sources while writing.

Jack Campbell: When I need something I don't have, I research it. I guess that makes the process self-freshening.

Elizabeth Moon: In the new books, for instance, I needed to know a lot more about longbows than I did before, and pestered an expert friend (and ran off with one of his books for several months!)

Betsy Mitchell: Jack, you go to *movies* as research??? Sometimes I think whoever writes movie scripts needs to research more than anybody else. I'll never forget that helicopter flying into a train tunnel in one of the Mission: Impossible films.

Jack Campbell: When I did a time travel story set in 1775, I went online to check maps in the library of congress so I could accurately plot the movements of characters.

[Comment From Andrew Whittaker: ] Wouldn't that depend on the type of movie you go to see?

Elizabeth Moon: Betsy, I find that movies give me visuals, but not technical information...sometimes also gestures, postures, etc. from other cultures.

Jack Campbell: Well, Betsy, I didn't say I always got good examples. Sometimes they tell me what not to do. More often they just give me ideas, general concepts, ways to tell a story. Like the segment in UP that charted the life together of Karl and his wife. Four minutes, no words, and just amazing. I want to learn how to do that.

Elizabeth Moon: Since my criteria for "good movie" are great scenery, swordfights, and running horses, you can understand why my take from movies is mostly scenic!

Betsy Mitchell: Who do you keep in mind when you're researching? Is it mainly for your benefitâ€”to help you solve a plotting problem or a technical detailâ€”or are you thinking of your eventual readers?

Jack Campbell: Both for me. I need things right to make sure I tell the story right. But the readers also expect good writing and accuracy. If I don't have the information right, the story won't be right.

Elizabeth Moon: Both, Betsy...I do some research purely for myself—to feel confident in an area—but the point of it is, in the end, to serve readers—to make the book better.

Jack Campbell: Great minds!

[Comment From Matthew Dyer: ] Do you have a system or process for recording notes about your research? Something that you can easily go through or pull up during the writing process so you can avoid thumbing through dozens of marked pages in a book?
4:11 Jack Campbell: Someday I'm going to develop a system...I guess my usual system feeds creativity using chaos.

4:11 Elizabeth Moon: Not really, Matthew (if you saw my desk you'd know why...) but it depends somewhat on the kind of research. For an alternate history story, where dates are critical, then yes—it's all written down, in the computer or by hand.

4:11 Betsy Mitchell: I've seen your desk, Elizabeth.....

4:11 Elizabeth Moon: When I was younger, I used to have card files and try to stay organized, but now—not so much.

4:12 Elizabeth Moon: I know, Betsy. I'm still planning to post the more recent pictures, but since then...changes in printers and it's...interesting.

4:12 Jack Campbell: Sometimes I have to write stuff down. In the Lost Fleet series I had to keep track of which ships had been damaged or destroyed, and those added up pretty quick, so I maintain a running list.

4:12 [Comment From Claire Eamer:] What are some of your favourite go-to sources for research?

4:13:

4:13 Jack Campbell: The Library of Congress online is great. I love Stone's A Glossary of the Construction, Decoration, and Use of Arms and Armor in All Countries and All Times.

4:14 Elizabeth Moon: For economic history, Braudel's books. For legal history, mostly books I picked up in the university—Drew's translations of Burgundian and Lombard laws, Lear's book on Roman and Germanic law. For the court martial in Once a Hero, I used a military manual of courts-martial.

4:15 Elizabeth Moon: If possible, I try to find someone who does whatever it is—fencing, sailing, etc.—and talk to that person—or, ideally, several such persons. Multiple first-hand sources make better research.

4:15 [Comment From Russ:] How much academic or technical research do you do vs. having actual "hands-on" experiences? Do you have a preference for one over the other? For instance, getting on a horse for the first time may be a neat experience, but it doesn’t make you a master horseperson like?

4:15 Jack Campbell: Otherwise I tend to pick research sources fitting the topic. Like the 1862 U.S. Cavalry Tactics, or a book of Hawaiian mythology.
Elizabeth Moon: Hands-on experience is best, but you're right, Russ, that one time on a horse isn't enough. It does, however, give the writer the physical feel that reading about it can't. My preference is to learn something myself, or—if there’s not time or I can't (like flying a fighter plane) talking to several people who do. And then add in the book-learning type of research—as much as I have time for.

Jack Campbell: Russ, I like being able to see, feel, hear things myself if possible. I think that's important. Sometimes its critical. I did an alternate history story in which I needed a view of the Gettysburg battlefield which was simply not available in any source. So I went there and walked the terrain and looked around.

Betsy Mitchell: This question feeds into one I was going to ask. Elizabeth, you served with the Marines; Jack, you were in the Navy. Have your real-life experiences served as research, and how can other writers draw on their own?

Jack Campbell: Absolutely. I worked out the movements of my spacecraft engagements using what I had learned about relative motion from driving a ship, just for one example. I think anything anyone has done can serve to give important detail and understanding to a story, and perhaps bring out aspects of something that most people might never expect.

Elizabeth Moon: Absolutely, real-life experiences inform research—and are the best way to convey competence. Anything a writer does is material for their writing...for instance, I played touch football in college, and later used the physical, sensory input from that in writing about a battle in _Sheepfarmer's Daughter_.

[Comment From Deeds:] What's the best way to approach experts over the subjects for your research?

[Comment From Harvey B.: ] I've wondered about that, too!

Jack Campbell: Respectfully! Let them know you appreciate their knowledge and their time. Never go in acting like they owe you an answer. Give them some sign that you've done enough research to know what to ask.

Elizabeth Moon: Get a general background before contacting the expert (unless it's a friend you know well)— show that you've done some homework—and then tell the expert you'd like some information because you're writing a book. Most people are quite willing to help a writer, but they do get tired of questions that could've been answered with a basic search.

Betsy Mitchell: Can you give us an example of one time you approached an expert?

Elizabeth Moon: For instance, on the WWI story, I read books, looked things up on the internet as much as I could, before approaching a very specialist WWI listserv—and then said "I've read this, this, and that, but I can’t find out the names of all the destroyers in the Adriatic Squadron, August 1914."

Elizabeth Moon: Someone in the group knew where the information was in archives in England, and who could access them—it was a huge help.
It's important to try a wide range of materials. I even ordered marine charts of the Greek coast for that story, and used a book of maps published in 1912.

4:23 Jack Campbell: I had to go to a lot of experts on that Elizabethan grammar project. I finally found one who'd answer me (Kage Baker, an outstanding person who was sadly taken from us recently). See told me everything about my story that wouldn't work given Shakespeare's time, and I listened and found a way to make the story work. She liked that.

4:24 Elizabeth Moon: And do try to have more than one source for your facts, even if you're using a known good source...even a good source may have one or two errors and you won't know it if you don't look.

4:24 [Comment From Harvey B.: ] Are there any expectations that people should have when interviewing an "expert?" Is it mostly via email? And if you need to follow-up, how much time is generally okay without being pushy?

4:33 Jack Campbell: Nowadays a lot is email. If someone doesn't answer, I would assume they either too busy to answer (a very common condition) or doesn't want to, so I don't think I'd send a follow-up unless I knew the person I was asking.

4:33 Betsy Mitchell: Aaaaaand we're back!

4:34 Elizabeth Moon: Experts vary in personality and in the time they have available. I try to estimate how much time someone might need to answer my questions, and tell them, but I might be wrong. If someone's snarky with me, I just switch to another expert.

I have buttonholed someone on an airplane—we got to talking, and I learned that he was an expert on something I'd been looking for. He was happy to be asked—but not everyone would be. Mostly these days, I use email—but I do stay alert for opportunities to meet experts, both while traveling and while interacting with people in any situation, from bookstores to church conventions.

4:34 [Comment From Amy Adams: ] hi elizabeth! love your books!! if you want to reach out for expert advice but aren't sure who to talk to—like you know the topic but not the expert—how do you find one? Google?

4:35 Elizabeth Moon: Google isn't a bad start, but also look for some books on the subject—notice who wrote them, who the acknowledgments are to. Contact local universities, too.

4:35 Jack Campbell: That's a good place to start. There's a lot of sites these days that are "ask an expert."

4:35 Betsy Mitchell: Can you give some examples?

4:35 Elizabeth Moon: I've called universities to look at the faculty lists in the areas I'm hunting.

4:35 Jack Campbell: Not right now! But as best I recall Greenwich observatory had a site like that for astronomy questions.
Elizabeth Moon: The Ladybird Johnson Wildflower Center has an "ask our experts" link, and I've used that for anything to do with native plants past and present.

[Comment From Ann:] Elizabeth—I LOVE YOUR BOOKS!!! I was wondering if being a Marine had an affect on your writing?

Elizabeth Moon: Oboyyes!! Nobody gets through the Corps without having it affect everything in their lives, one way or another.

Jack Campbell: Elizabeth always ensures all her words are neatly lined up in ranks.

Elizabeth Moon: It’s affected not just the overtly military parts of my writing, but also characterization.

Elizabeth Moon: There’s a Navy view!

Jack Campbell: Some people have commented that the Marines in my series are too well behaved.

Betsy Mitchell: Here’s another topic: Both of you have published fantasy and science fiction. Is doing research equally important in both genres?

Elizabeth Moon: YES, absolutely. Readers of both include people who are experts and who will play "Gotcha" all over your hide if you don’t.

Elizabeth Moon: Besides, solid research makes better stories as long as it doesn't become infodump.

Jack Campbell: Yes. Fantasy uses real objects, like horses, swords, etc. You need to get all that right just as much as you need to get technical details on a starship right. You can always say "it’s magic" or use techno-babble, but in either case you hurt your story.

Elizabeth Moon: It annoys me when people don’t do their research on things I know about, from breadmaking to the differences between military ranks, the differences between farm attitudes and city attitudes.

Jack Campbell: Tolkein is the poser child for research in fantasy. His world was incredibly detailed.

Elizabeth Moon: For instance, if a book is set in a fantasy farming village, real farm people are not squicked by familiar smells and sights that can upset modern city dwellers.

Jack Campbell: Yes, getting even the broad information wrong on a topic is a real turn–off. I’ve read books where the captain of a sailing ship orders "full speed ahead."

Betsy Mitchell: Elizabeth, I recall a convention we both attended once to which you brought an actual harness for a four–horse hitch, and had people from the audience step into place as the horses. That was a dramatic lesson for some budding writers, I think. The sheer *size* of the thing was startling, and the weight of it. And you talked about how far a horse could get in a day, and how much food it took to keep them healthy on long journeys.
Betsy and Elizabeth are you ever worried that you will be criticized OR worse a lawsuit due to facts and experts not being correct. Did the James Frey affect the way you research, write and edit?

Betsy Mitchell: If I were a nonfiction editor, I think I would live in constant fear. As it is, I sometimes have to deal with embarrassing "gotchas" from readers—but not too often, I have to say. My authors are pretty trustworthy.

Jack Campbell: Logistics! How much does it eat? How far can it go in one day? How do you deal with what comes out the other end? The Tough Guide to Fantasyland speculated that horses on fantasy are actually plants.

Elizabeth Moon: I'm not worried about that because I'm careful and the kinds of research I'm doing isn't likely to cause trouble. Fortunately, I had good teachers in the art of research and I can cite sources if I have to.

Jack Campbell: Someone will always find something to criticize. You just have to do your best to get things right.

Elizabeth Moon: Oh, yes, Jack—I got chewed on for one mistake in _Sheepfarmer's Daughter_, and it was the result of relying on one usually reliable source.

Elizabeth Moon: I don't do that anymore.

Betsy Mitchell: That brings up a question: How many sources is enough?

Jack Campbell: It depends, but on tough things I like at least two.

Elizabeth Moon: Rule of three, in my case, though if I'm adapting something a lot, I might go with one I'm sure of.

[Comment From Matthew Dyer: ] Any advice on how to include interesting bits of research while avoiding info-dumping something you think is neat on the reader?

Elizabeth Moon: You can't use everything you find interesting—it has to be plot-relevant and important to the characters in the scene at that time. Very frustrating. One of my editors told me once "Not everyone cares that much about the science of tying flies for fishing."

Jack Campbell: If it's something that affects the story, then there should a natural way to show the information. If it doesn't really affect the story . . .sometimes some really cool stuff just has to be set aside. But I think the rule is to try to make it a natural part of the story.

Elizabeth Moon: So the key is to check that it's really needed. Also you give the information only in trickles as it's needed.

Betsy Mitchell: Jack, when we were preparing for this chat you mentioned the importance of finding what you're not looking for. Can you give us an example of what that means?

Elizabeth Moon: That is important! For instance, in the WWI story, I
found something important in a Prime Minister's daughter's memoirs, which I almost didn't read. The kind of earplugs used by senior officers.

4:51 Jack Campbell: Sometimes in the process of just looking around you find information you didn't know you needed or wanted. It's a matter of not being boresighted on the one fact you want, but being open to browsing and seeing what else you can find. You never know what might build a good scene, a good story or a good book.

4:52 Betsy Mitchell: So that kind of little detail, you just make a note of and use it when it comes into play?

4:53 Elizabeth Moon: Yes...whatever is needed, when it comes up. Writers need to be data-hogs.

4:53 [Comment From Sarah:] Do you ever wish that you wrote straight fiction so you wouldn't spend so much time researching or do you really enjoy researching?

4:53 Jack Campbell: Yes. When it works, or as I said I've written stories from things like that. While looking into information about Lexington and Concord I found the information about the shot heard round the world, that no one knows who fired it, and used that to build a novella.

4:54 Elizabeth Moon: No, not really. I'd still have to do research. I remember when a famous writer used my home town for a setting and got things wrong....I was very grumpy.

4:54 Elizabeth Moon: The kind of research needed for both SF and fantasy is FUN.


4:54 Elizabeth Moon: The only time it's not fun is when I'm not finding what I need. Then it's work.

4:55 Jack Campbell: There's a series I really like, the Bloody Jack series, which is straight historical fiction, and uses a tremendous amount of research. It shows.

4:55 Elizabeth Moon: But again—writers who enjoy learning and enjoy digging into new things have an advantage over those who don't.

4:55 [Comment From Melissa:] Betsy have you ever had to say to an author DO MORE RESEARCH!!!!?

4:55 Betsy Mitchell: Yes, absolutely. I always prefer when an author does TOO MUCH research, because it's easier to trim details out of a manuscript than to try to extrapolate from something that's too flimsy.

4:56 Jack Campbell: Stan Schmidt at Analog is famous for demanding the right information and right details in the stories he buys.

4:56 Betsy Mitchell: What are some pitfalls of not doing your research?

4:56 Betsy Mitchell:
4:56 Betsy Mitchell: BTW, here's a photo of Mac, one of Elizabeth's horses. I'm sure he makes great research material.


4:57 Elizabeth Moon: Pitfalls—well, you get it wrong and then someone who's an enthusiast expert chews on you about it.

4:58 Elizabeth Moon: Mac makes great research material for all the ways a horse can go lame, get hurt, and fail to grasp the nature of "work."

4:58 Betsy Mitchell: We get emails here about mistakes, too. And if it's anything I should have caught myself, I share in your embarrassment.

4:58 Elizabeth Moon: He's actually an example of failure to do enough research—I bought him off the internet.

4:59 Betsy Mitchell: I rented a vacation house off the internet once, so I can imagine how that could happen.

4:59 Elizabeth Moon: Xenophon was right—look at the feet first. Not the pretty picture.

5:00 Betsy Mitchell: We've reached the end of our time, but the transcript for this talk will be posted tomorrow. Thanks very much for coming, Jack and Elizabeth! And for all the words of wisdom.

5:00 Jack Campbell: Yes. Because I write a fair amount of historical or military stuff, and that is often simply unbelievable. "Really. It happened." Or "really, that's how they build them."

5:00 Elizabeth Moon: Thanks for having us, and...I'm outta here on the way to Austin for the Book People event.

5:00 Jack Campbell: Many thanks for the chance to chat here.

5:00:
5:01 [Comment From danparsons: ] bye bye, thanks for your time!

5:01 Betsy Mitchell: There were a few comments we didn’t have time to answer, so we’ll ask our experts to respond to them and we’ll add them to the post tomorrow. Thank you all for attending!

Additional Questions from the class

Q. I know I have trouble if I try to research before I write. I have a tendency to flail a bit until I know what the story is going to be.

Elizabeth Moon: If you don’t have a clue what story you’re writing—just a vague nudge to write—then research can be a great source of ideas. Try reading in two very different areas—something highly technical, a science journal, and something very people-related, like politics or history. If two ideas from those cross-connect, now you’ve got a story-kernel. If you’re not actually writing, you should be learning something—anything.

Jack Campbell: There’s nothing wrong or (I think) unusual about not completing all research before you start writing. Often you don’t know what you’ll need until you get there in the story. But it is important to have a general idea of where the story is set, how things will work in the story, and where you want the story to go. Otherwise you might get way down the road only to discover that the story has fundamental obstacles created by some aspect of reality. I try to learn enough going into the story to know I can do the story the way I intend to, or to know how I can do the story I want. It’s like getting a firm foundation in place before building begins. That doesn’t mean you need to know everything. How much is enough? That’s something you learn by experience, and I think it varies by individual.
Q. Have you ever had to deal with fans that think you have something wrong when you have it right?

Elizabeth Moon: Yes, of course. I try to be tactful about what they don't know, but sometimes the only way to be tactful is not to answer them at all. I've run across college fencers who seem to think everyone always fenced on a piste, single-handed . . . they've never seen earlier fencing styles and at least one of them believed a fencer would fall over if they tried to use a second-hand weapon. When I meet them in person, a demo is usually sufficient. These days, it's mostly fans who want to argue with me about the realities of publishing. (One more time: No magic buttons. It's not about "connections." It's about the writing.)

Jack Campbell: It happens sometimes. Usually it involves misperceptions about what the military is really like rather than straight facts. Occasionally it's a disagreement about physics, and then the problem is often that I've deliberately simplified things to make them understandable to the average reader. When I do run into questions about accuracy, it often involves short fiction published in Analog magazine. Analog readers are notorious for spotting any errors. For example, after "Swords and Saddles" was published in the April 2010 issue, one reader noted that even though the story began in 1870, the accompanying illustration showed a cavalry soldier holding a U.S. flag with the wrong number of stars for the states in the union that year. Not my fault! I just wrote the words.

Highly Recommended Research Sources, As Suggested By:

Elizabeth Moon

1. Really good dictionaries (you need more than one) including the OED or Compact OED if you can possibly afford it (try eBay).

2. For Science Fiction: Subscribe to at least one (more is better) of the fast-publishing journals, either online or paper. Nature and Science are ideal—lots of ideas, and more up-to-date science and politics relating to science & technology than other sources. And they have book reviews that suggest books you may need in your permanent research library. Their online sites are also good, containing some material not in the printed journals (and vice versa).

3. Wikipedia, for fast and dirty overviews only—check all facts from there against something else—it does often list sources.

4. Encyclopedias—I like Britannica, on paper, and an older used copy (1950s or earlier era) will prove valuable for quick overviews of many things...the photographs of European cities pre-WWI, and the older maps of political entities, are great for historical writing. Digital versions are more compact, but reduce the serendipity quotient, since some of the most valuable bits are things you stumble over while not sure what you're after.

5. For fantasy: Fernand Braudel's Civilization and Capitalism in the 15th to 18th Centuries (three fat volumes!!) provides the most compact and analytical study of politics, religion, art, and economics in these centuries and plenty of references for looking up more about the details you might need.

6. Textbooks. First or second-level college texts in a variety of fields useful to writers: history, anthropology, psychology, ecology, chemistry, physics,
etc. In your own field, you'll have more up-to-date stuff, but these will let you quickly check the basics before you go online to look for more.

7. [http://www.Healthline.com/directory/3dbodymaps](http://www.Healthline.com/directory/3dbodymaps)—Most of us injure our characters or make them sick for dramatic effect—it helps to know what that bullet/spear/knife/sword/arrow is going to hit. I hate the ads on this site, but it gives you layers of the human body and you can rotate the images.

8. [http://eMedicine.Medscape.com/emergency_medicine](http://eMedicine.Medscape.com/emergency_medicine) is a great resource for the writer who has no specific medical background. Want to know what the chain of command is in a hazmat situation? How to evaluate penetrating abdominal trauma? What EMTs should do to recognize child abuse? All here. With some references, and enough background that you can then ask intelligent questions of active professionals.

9. [http://BugGuide.net/](http://BugGuide.net/) Whether you’re inventing the biology of an alien world or a fantasy kingdom, or dealing with human-settled/terraformed ones, there will be more little critters than big ones. Take a look at the wide variety of critters here, to do a more realistic and interesting job of populating those spaces.

**Jack Campbell**

2. *The Sword and the Pen* by Sir Basil Liddell Hart
3. *A Glossary of the Construction, Decoration, and Use of Arms and Armor in All Countries and in All Times* by George Cameron Stone
4. *Lost Country Life* by Dorothy Hartley
5. *The Synonym Finder* by J. I. Rodale
7. *Mythology* by Edith Hamilton
8. World Digital Library ([http://www.wdl.org](http://www.wdl.org))
9. Search engines: Google or Yahoo or Bing
10. *Connections* and *The Day the Universe Changed* by James Burke