

# **ASTR 270**

## **Public Outreach in Astronomy**

### **Class 04**

#### **Know and Respect Your Audience**

# Last Week

- Intro to the course, you shared your motivations for taking it
- HW1: Email your Prof
- Good vs Great Sci-Comm: **Make it personal!**
- Demo of UW Planetarium

# This Week

- Fundamentals of storytelling (Tuesday)
- Understand & respect your audience (Thursday)
- HW2: Podcast Analysis DUE Friday (tomorrow) 9pm
- Pitch 1: DUE Tuesday
- ***Eclipse Next Monday!!!!***
- HW3: DUE Next Friday

# Planetarium Training

- Group 1: Gollotti, Hickey, LaPlace, Mujumdar, Ohrenschall [TODAY]
- Group 2: Alley, Brown (Rowan), Ho, Ross, Seth [Tuesday]
- Group 3: Brown (Nathaniel), Dykes, Lewis, Williams, Zumwalt [Tuesday]
- Group 4: Brouse, Chatchadanoraset, Knowlton, Koshy, McCullagh [Thursday]
- Group 5: Chen, Friedmann, Li, Otulo, Sallis [Thursday]

# Why do we do Sci-Comm?

- What do we hope to accomplish?
- Why do we engage “the public”?

# The Sci-Comm “Deficit Model”

- A pervasive mentality about “*the public*”:  
if only they understood science, knew the facts, then they would (give us more \$, agree with us, choose different, believe different)
- This assumes the public is ignorant, doesn’t know things, simply lacks science information
- In this model, Sci-Comm’s job is therefore to deliver information, to increase “science literacy”
- Lots of disagreement with this...

# The Sci-Comm “Deficit Model”

- YES, we need to increase science literacy. Some people simply don't know... many even WANT to know!
- BUT, assuming the public is generally ignorant is flawed. (Your audience will surprise you)
  - will hurt your ability to connect with them.
- Also, dumping tons of information often doesn't change people's opinions
- Feeds the “scientists as gatekeepers of knowledge” mentality

# “Know your audience”

- Very common advice in Sci-Comm (and communication in general)
  - e.g. see [Wilson et al \(2016\)](#), [Cooke et al. \(2017\)](#)
- *What does this mean?*



# **“Know your audience”**

- Who is your intended audience?
- What is their age? Educational level? Topic-specific background?
- How are they coming to your event/talk/content?
- What do they want or expect out of your content?

# **“Know your audience”**

- Knowing your audience is vital for connecting with them!!!
- You may need to build trust and rapport with the audience (stubborn adults)
- You may need to entertain them to capture their attention (kids)

# Science communication for any age

- There's basically no topic (in astronomy at least) that won't work for any age
  - BUT: Some emotional angles work better at different ages
  - Most 6yr olds know +5000 words, can understand ~10000
  - Most adults know 20-30k words!
- Adjust your language, examples, tone, pacing, duration, humor... but not your science!
  - Good: use humor
  - Bad: be out of touch (unless you're so uncool you're cool)

# Example audiences you may encounter

- *(You can tell us in your Projects what audience you want us to pretend to be!)*
- Kids (ages 4-10), Teens (11-17), Adults, Retirees
- Academics
- College educated
- Policymakers/politicians
- Bar patrons
- Angry people on the internet
- Science fans
- Science foes

# Example audiences you may encounter

- Even very specific audiences are not monoliths
  - e.g. professional astronomers work on a huge range of topics
  - e.g. many college educated folks don't know a **star** from a **galaxy**
  - e.g. politicians not experts in most things, but have deep backgrounds

# Adapting to the audience level

- Children: baby planets are made around stars when dust and rock clump together, like snow sticking to a snowball as you roll it, getting bigger and bigger
- Adults: when stars are young, the dusty disk of material around it will start to form planets. Gravity acts like snowball...
- Academics: planets form via accretion within the protostellar disk

# What if I don't know my audience?

- Obviously you might not know who will be at a show/event
- Instead focus on e.g. expectations, how they come to the content/event, etc
- Be nimble, adapt in real time
- Respect them...

# Respect your audience

- Not discussed as much, but (IMO) very important for good Sci-Comm
- Have empathy for them... your audience is *very likely* to be other humans
- Have a clear message or story you want to tell!
  - See last lecture: storytelling is super helpful
- Your presentation is “at war” for their attention... people are busy and complex. Get to the point, and stay on message!



# Respect your audience

- Have material at the appropriate level for the audience
  - Don't overly "dumb it down"... people are super smart, even kids!
- Jargon can help! (e.g. establish authority, educate, speak with precision), or hurt (quickly lose your audience)
  - Try to eliminate extra jargon, always define if unavoidable, redefine/remind often
  - "Jargon" also includes "basic" vocabulary sometimes (esp. in astronomy)

# Respect your audience

- Stick to your allotted time
  - Going short hurts your credibility & message
  - Going long also hurts your credibility, irritates your audience, angers your fellow presenters
- Some rules of thumb for talks (1-2 min per slide)

# Respect your audience

- Do some due diligence
  - Don't fail to mention something they care about (an easy joke or reference, helps "win over" audience)
  - Don't explain water to fish
- Know your material
  - Practice!

# Respect your audience

- Keep on pace, time management during presentations
  - Most people start nervous... program “calm down” time into your material (e.g. start with a joke, show of hands, anecdote, a slide you can read off)
  - Don’t ZIP through material (I do this when nervous!)
  - Don’t get bogged down, stuck over-explaining (I do this when under-prepared)

# Respect your audience

- Don't (obviously) recycle or steal material
  - Everybody recycles talks (this is good and expected)
  - Nobody appreciates watching a talk that was intended for someone else

# Respect your audience

- Say thank you, don't just leave "THANK YOU" up on the screen
- Finish a talk with a conclusion/summary slide
  - Help remind your audience what just happened, will help them remember their Q's
- Take Q's, if appropriate. People enjoy dialog
- Don't lie or guess, just simply say "thats a good Q, I don't know"

# Know your audience: mistakes I often see

- Wrong level of content presentation for the group
  - e.g. Not enough intro or background, even among PhD astronomers
- Assuming everyone present really cares about science/astronomy
- Not “reading the room”
- Bad time management

# Conclusions

- Spend some time considering your audience before your presentation
- Respect your audience during your presentation
- It can be VERY fun to experiment, teach people things they don't expect to learn, adapt content for new audiences
- “The public” is complex, smart, busy





# Exercise: AND, BUT, THEREFORE

- Find a partner
- Get an astronomy topic prompt (or pick your own)
- Spend 10 minutes building an AND, BUT, THEREFORE story outline
- Remember:
  - AND is facts/context
  - BUT is key to setting up “conflict” or tension (don’t have to use “BUT”)
  - THEREFORE is the story you’re going to tell

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