



Over the last 5 years we've developed a curriculum of science communication with workshops, handouts, and slides

Skill	Topics developed	Deliverables	Learning Objectives
Core Skills	<ul style="list-style-type: none"> Designing goal-driven communication Distilling your message Crafting explanations Motivated reasoning 	<ul style="list-style-type: none"> Handout: a back-pocket guide to science communication Handout: choosing content and structure Slides: Bridging the gap 2 Exercises: distilling soccer, distilling a research abstract 2 video examples: diffie-hellman key exchange Handout: crafting explanation Slides: "The Landscape of Science Communication" 	<p>Analyze and discuss the following components of science communication:</p> <ul style="list-style-type: none"> The motivation behind the work Audience-appropriate language & level of detail Specific & vivid examples, metaphors Critique of deficit model thinking <p>Explanations provide meaning:</p> <ul style="list-style-type: none"> Intuitions behind the core ideas Concrete examples or analogies Explicitly connected to its abstract formulation
Storytelling	<ul style="list-style-type: none"> Adapting research into a story structure Starting with motivation Adapting to the appropriate level of detail 	<ul style="list-style-type: none"> Slides: "Telling Science Stories," "Bridging the Gap" Examples: 3 annotated audio clips from Radiolab Handout: Storytelling Techniques in Radiolab 	<p>Incorporate the following components when communicating about science:</p> <ul style="list-style-type: none"> The motivation behind the work, using some of the following techniques: long term impact; [goal] but [obstacle]; personal connection, negative space Story structure: stakes, obstacles, solution, resolution The ability to generate several versions of audience-appropriate language & level of detail Specific & vivid examples, metaphors An emotionally compelling story for the audience to connect to Depiction of both the scientific process & product
Vocal delivery	<ul style="list-style-type: none"> Awareness and control of vocal delivery techniques 	<ul style="list-style-type: none"> Workshop: "The Presentation Games" Exercise: common vocal distractions and how to fix them Handout: theatre warmups Rubric: Evaluating Presentation Delivery 	<p>Delivery engages the audience:</p> <ul style="list-style-type: none"> Presence: the speaker faces the audience with eye contact Movement: uses deliberate movement to emphasize the point; does not fidget or distract from the content Volume & Tone: the speaker is loud enough avoids up-tone or monotone Pacing: the speaker is slow enough to understand, uses pauses, does not use filler words
Improv	<ul style="list-style-type: none"> Emotional presence Audience-focused delivery Verbal abstracts (30 second elevator pitch) 	<ul style="list-style-type: none"> Workshop: "Communicating Science with Theatre Techniques" Handout: theatre warmups Binder of exercises and essays from Stony Brook 	<ul style="list-style-type: none"> Delivers fluid, human-centered elevator pitch with eye contact, engagement Shows proficiency in vocal delivery learning objectives Can use theatre warmups to prepare for interviews, public speaking Gives clear and engaging answers to unexpected questions
Visual Design	<ul style="list-style-type: none"> Assertion-evidence model 3 layer of emphasis model of visual hierarchy Theory of color schemes Intro to typography Chunking theory 	<ul style="list-style-type: none"> Workshop, alumni webinar: "Clear Thinking Made Visible" Exercise: 12 before/after examples Tutorial: using Keynote Handout: Designing Presentations with Purpose 6 book recommendations 3 online resources 	<ul style="list-style-type: none"> Creates slides with one message stated as a complete sentence Uses three layers of emphasis (Background, Data, Emphasis) Everything contributes to the message Macro structure reflects the argument Color choice reflects the argument Chooses appropriate data visualization Makes good use of typography Uses online resources for these tasks
Talking to the Media	<ul style="list-style-type: none"> What to do when a reporter contacts you What makes a story newsworthy Distilling your message even more Non-verbal communication for TV Following up with reporters 	<ul style="list-style-type: none"> Workshop: Talking to the media Handout: preparing for a media interview Handout: theatre warmups 	<ul style="list-style-type: none"> Bring work to the attention of the media Identify newsworthy components Give clear and concise answers to interview questions Redirect topics to stay on message Adapt to the conversation and its scope Following up with the interviewer with good media practices
Cultural Cognition	<ul style="list-style-type: none"> Disentangling knowledge from identity (deficit model) Hierarchical / egalitarian individualist / communitarian model 	<ul style="list-style-type: none"> Workshop: "Why are facts not enough?" Rhetorical toolkit: Designing science communication Slides, primary literature 	<ul style="list-style-type: none"> Critique of deficit model thinking Familiarity and incorporation of cultural cognition work
Strategic Frame Analysis	<ul style="list-style-type: none"> Identifying frames How frames are tested Using strategic framing 	<ul style="list-style-type: none"> Workshop: "Strategic Frame Analysis" Example: CDC myths and facts about the flu Handout: a framing checklist 	<ul style="list-style-type: none"> Familiarity and incorporation of framing concepts Develop communicative framing that resonates with the values of the audience