

Collaboration Essentials:

“Asking Great Questions”

Listening,
Paraphrasing, Summarizing

Relationship

trust collaborative shared goals attitude consistent clear and complete
regard and respect understand continuity commitment contribution domain expert's needs useful


Explaining
Statistics


**ASA Committee on
Applied Statisticians
Collaboration Webinar #7
Apr. 17, 2018**

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CAL POLY
SAN LUIS OBISPO

Cal Poly's Statistical Consulting Service

- Six part-time faculty consultants/year
- Several undergraduate consulting interns
- Service about 160 clients/year
- Free for most clients



Statistical Communication and Consulting Course

- Train 30-40 undergraduate collaborators/year
- 40+ hours of supervised instruction, practice, and mentoring
- Non-technical and technical content
- More than 300 collaborators trained since 2004



Laboratory for Interdisciplinary
Statistical Analysis

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University of Colorado **Bou**

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Created in 2008; Moved to the University
of Colorado **Boulder** in 2016

- 256 Statisticians
trained in LISA
- 2793 Collabor-
ation Projects
- 2996 Walk-in
Visitors
- 218 Short
Courses



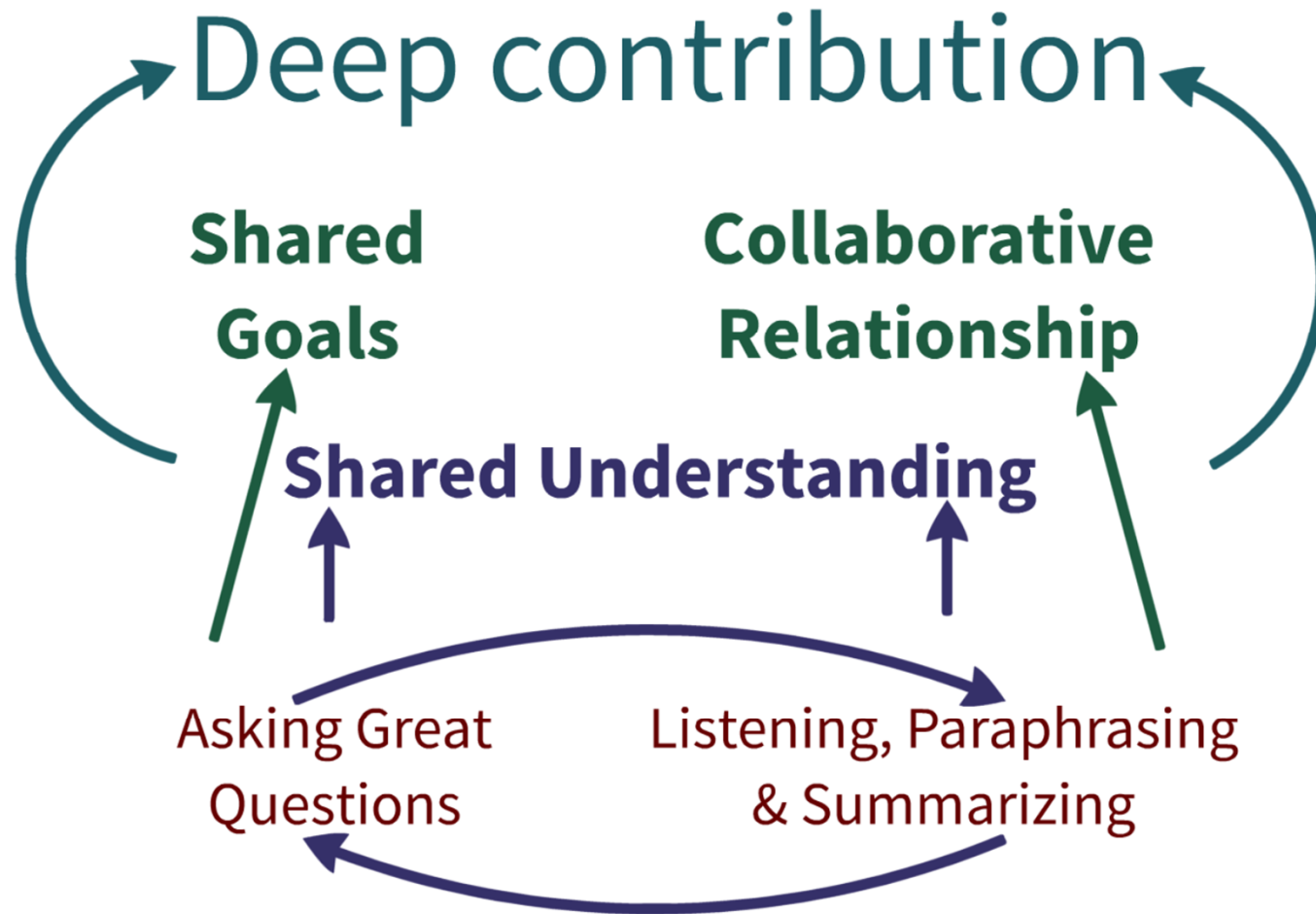
Common Advice for Asking Good Questions

1. What do you need to find out? (Content to accomplish the task)

- Depends on statistical details
 - Types of studies
 - Stage of investigation
 - ...
- Janice Derr (2000).
“Statistical Consulting:
A Guide to Effective
Communication”

2. How to ask good questions? (Method or style of asking)

- Open v. Closed questions
- General v. Specific questions
- Probe for specific details



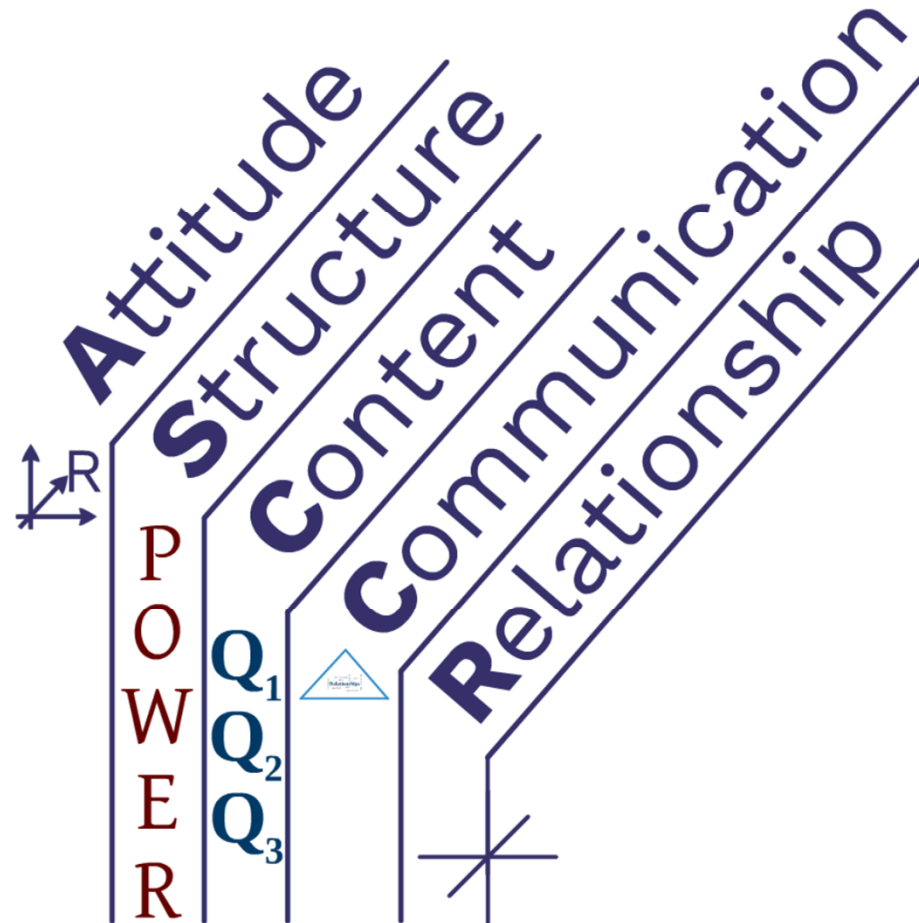
Collaboration Essentials:

Great Questions ...

1. **Create shared understanding**
(Content to accomplish the task)

2. **Strengthen the relationship**
(Method, style, or reason for asking)

ASCCR Frame for Collaboration





Examples of great **Attitude** questions

1. (Ask yourself) Am I committed to focus on finding answers and solutions to the domain expert's business/research/policy questions and problems? Have I adequately prepared?
2. My intent is to be helpful. What's the best way I can help you? Here are various options...
 - Study design
 - Collaboration through co-authorship
 - Meeting with your boss to review next steps
 -



Prepare
Open
Work
End
Reflect

Examples of great **Structure** questions

1. I want to make sure I respect both your time and my time as well as make sure we are efficient with our meeting time today. That said, I have up to 90 minutes for this meeting, though meetings usually last around an hour. How much time do you have available for today's meeting?
2. To make sure we use our time together most effectively, I'd like to know, what would you like to accomplish in the time we have available today?

ASCCR Frame



Examples of great **Content** questions

Q₁ Qualitative

1. I have learned that I make the most valuable contributions to a project when I understand what you want to do and **why** you want to do it. To help me understand I propose that I ask you some questions and we discuss until you feel that I understand the project. Will that work for you?

- What is your overall scientific question? Why is that important?
- If this question gets answered, what happens next?
- Why is that important?
- How does this fit into your research or big topics in general?

Q₂ Quantitative

Q₃ Qualitative

ASCCR Frame



Examples of great **Content** questions

Q₁ Qualitative

2. Please tell me as much as you can about how the data were collected, because how data are collected has a large impact on the appropriate ways to analyze the data and the meaning we take from it.

Q₂ Quantitative

Q₃ Qualitative



Examples of great **Communication** questions

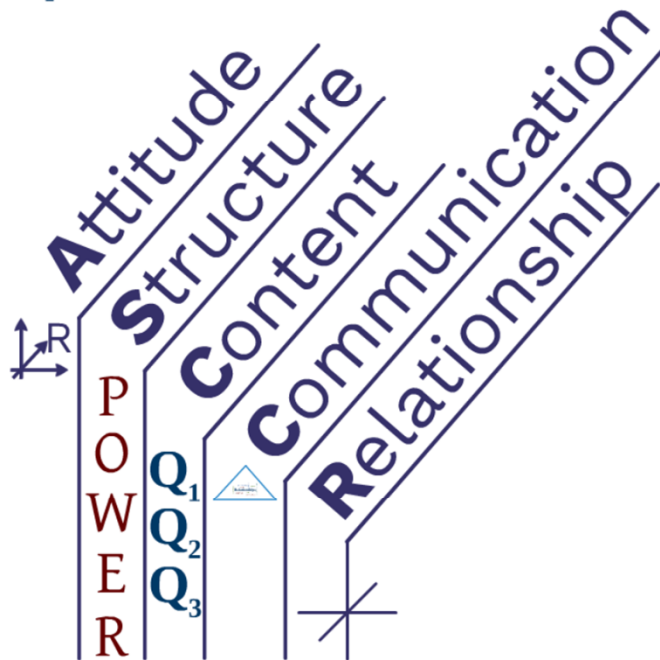
1. I'm not quite sure I completely understood everything you said. How about if I restate it and you can tell me if I'm understanding correctly?
2. Given our conversation about p-values, would you like me to talk more about this before moving on to our next agenda item?



Examples of great **Relationship** questions

1. Given our discussions today I would like to spend a few minutes talking about the possible roles I could play on this project. There are a variety of contributions I think I could make to this project, and I'd like to know, what are you thinking? ... If I do XYZ I would expect to be a co-author.
2. In my experience it has been useful to spend a few minutes reflecting on the meeting we just had and getting feedback on our interactions. Is there anything about today's meeting that we could learn from and perhaps do differently next time?

Use ASCCR Frame to guide *what* questions to ask



Ask these questions to *strengthen* the **Relationship**

How? Three Strategies:

- A. Preface questions with statements clarifying your intentions.
- B. Follow questions with behaviors and actions consistent with the prefaced words and consistent with building a strong collaborative relationship.
- C. “Soften” questions by phrasing them as questions (not demands) and reflecting intent to work collaboratively with the domain expert.

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Strategies for asking great questions

A. Preface ASCCR questions with statements clarifying your intentions.

B. Follow ASCCR questions with actions consistent with the prefaced words and consistent with building a strong collaborative relationship.



C. "Soften" questions by phrasing them as questions (not demands) and reflecting intent to work collaboratively with the domain expert.

Good Question

Structure: Did we accomplish everything you were hoping to in this meeting?

Great Question

Structure: We have about 10 minutes left to make sure we accomplished everything you were

Good Question

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Great Question

Structure: We have about 10 minutes left to make sure we accomplished everything you were hoping for in this meeting, and if not, devise a plan for the unaddressed items. Did we sufficiently accomplish Item 1? ...

Good Question

Content (Quantitative Q_2): Are you trying to confirm your hypotheses or explore the data to generate new hypotheses?

Great Question

Content (Quantitative Q_2): The types of analyses we do, how we report them, and what we can learn from them depend on if we are confirming pre-specified hypotheses or are exploring the data. So regarding your specific scientific question, which do you think fits the situation best ...?

Good Question

Content (Qualitative Q₃): Do these answers make sense?

Great Question

Content (Qualitative Q₃): To make sure we're correctly interpreting these results, can we discuss how these results fit in with the big picture of the project?

Which question is better?

A. Content (Qualitative Q₃): How will you explain these results to your supervisor? If you'd like, you can practice explaining them to me.

B. Content (Qualitative Q₃): I'd like to better understand these results. How would you explain them to your supervisor?

Please indicate your choice (A or B) using the chat.

Which question is better?

A. Attitude: To best help you, I'd like to understand what your end goals are for this project. What is your anticipated final outcome?

B. Attitude: What are your end goals for this project? I ask because I want to know what I should be aiming for.

Please indicate your choice (A or B) using the chat.

Which question is better?

A. Content (Quantitative Q_2): Is your goal to identify the factors that lead to success? Great, now I notice that all of these cases are successes. Do you have data on the failures too?

B. Content (Quantitative Q_2): Do you have any data on the cases that end in failures? Having data on both failures and the successes will allow us to identify the factors that lead to success.

Please indicate your choice (A or B) using the chat.

Which question is best?

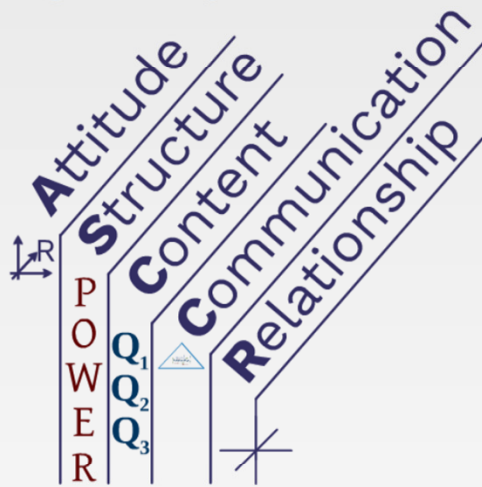
A. Relationship: I'd like to get more clarification before I invest lots of time. What role do you want me to play in this project?

B. Relationship: What role do you want me to play in this project? If I do XYZ I would expect to be a co-author. If you don't want that level of involvement I could do A and B and be listed in the acknowledgments.

C. Relationship: Given our discussions today I would like to spend a few minutes talking about the possible roles I could play on this project. There are a variety of contributions I think I could make to this project, and I'd like to know, what are you thinking? ... If I do XYZ I would expect to be a co-author. If you don't want that level of involvement I could do A and B and be listed in the acknowledgments. How about we list this as Agenda Item 1 next week so you have time to think about it?

In Summary...

Use the **ASCCR** Frame for what great questions to ask



Ask great questions to *strengthen* the **Relationship**

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So that this webinar is most useful to you, **what can we clarify?**

Materials: www.osf.io/xmtce

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In Summary...

Use the ASCCR Frame for what great questions to ask



Ask great questions to strengthen the **Relationship**

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ASA Committee on Applied Statisticians Collaboration Webinars
community.amstat.org/cas/home

- #1: Structuring Effective Meetings
- #2: Cultivating Productive Relationships
- #3: Collaborating Across Cultures
- #4: Conflict Resolution
- #5: Influence without Authority
- #6: Negotiations
- #7: Asking Great Questions
- #8: Teamwork (May 15, 1-2PM EDT)
- #9: Communicating Statistics to *non-statisticians*
- #10: Statistical Collaboration: Putting the Pieces Together

- Eric and Heather will be back in July for CAS Webinar #10: Collaboration: Putting the Pieces Together
- Also 9/9/2018 in Oslo, Norway for a 4-hour workshop at Advice2018, the first international conference on statistical consulting and collaboration: www.advice2018.bio