Communication in Statistical Collaborations: Teaching Statisticians
How to Be Effective Interdisciplinary Collaborators
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Statistics in Interdisciplinary Collaborations
- Data
- Knowledge
- Understanding
- Making Decisions

Communication in Statistical Collaborations
Students learn, develop, and practice the communication skills necessary to be effective interdisciplinary statistical collaborators, including:
- Listening
- Asking good questions
- Managing a successful collaboration meeting
- Giving effective feedback
- Writing statistical methods sections
- Explaining statistics to non-statisticians

In a final project, pairs of students apply statistics to answer a scientific problem by collaborating with a non-statistician of their choosing on a research project they find interesting. They present their results and experience to the client and the class.

Outside the Classroom: Practical Experience with LISA
LISA Laboratory for Interdisciplinary Statistical Analysis
LISA statistical collaborators work in pairs—one associate and one lead—to answer scientific questions of Virginia Tech faculty, staff, and student researchers. After demonstrating excellent skills in collaboration, associates are promoted to leads.

Weekly Discussion of Projects
Each week collaborators meet to discuss projects and clients with the entire LISA team. Collaborators present projects and ask for advice on how to proceed, or they explain to the group an interesting statistical method they used.

Weekly Video Coaching and Feedback Sessions
We collect and analyze data on ourselves to improve our collaboration skills. In a small group setting we give each other coaching and feedback, focusing on three aspects of the collaboration meeting:
1. Interpersonal relationships between the client and collaborators.
2. Intrapersonal attitudes and emotions.
3. Technical aspects, including whether the statistician understood the client's research questions and whether the client understood the statistical advice.

LISA Services
- In LISA collaboration meetings, statistical collaborators must identify and understand the clients' overall research goals and specific scientific questions before providing statistical advice or analysis.
- In Walk-in Consulting, statistical consultants answer clients' specific questions regarding their research.
- In LISA Short Courses, collaborators teach statistical concepts that attendees can apply in their research.

Classroom Innovations: Team Based Learning
Students learn to communicate and collaborate by doing so within their team
- Balanced and diverse permanent teams of 5-6 students
- Students learn course content by reading materials outside of class
- Students learn from their teammates during team quizzes and assignments
- Teams apply what they have learned on in-class exercises
- Grades are determined by 3 components:
  - Individual performance
  - Team performance
  - Team maintenance / Peer evaluation
- The professor lectures only on the material the students need help understanding

Virginia Tech
www.lisa.stat.vt.edu