

# Targeting Entry Points for Ethics in Chemistry Teaching and Learning

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Life for today's academic scientist can include competitive funding, research agendas driven by predicting the "hot" area of investigation, and the accumulation of students, papers, and citations as a measure of scholarly value. Djerassi has characterized the "tribal culture of research scientists" as an "overwhelming desire for name recognition...brutal competition...Nobel Prize lust..." and so on (1). In a 1999 essay, Sanders (2) argues that faculty attitudes such as these have negatively impacted the learning environment on campus. Sanders cautions faculty that they have contributed to a "culture of despair" in undergraduate education, where the seeds of Djerassi's competitive consumer mentality perhaps are being sown early in the academic season. Everyone is so busy competing to advance their personal status that there is little time remaining to acknowledge moral values in intellectual pursuits. Even the idea that we in higher education could be serving some larger good, as Sanders concludes, seems a quaint 1960s' anachronism.

In a previous paper, "A Case for Ethics", David Smith and I identified a number of principles for bringing this moral dimension into focus (3). The key idea in that essay was that

Education is not a neutral activity. Any program of education inevitably affects the way a student looks at the world, and as a result it must have some effect on the student's character. Even if we educate poorly or the effect is small, the aggregate outcome on students is still significant, as are our responsibilities. As faculty, we provide instruction in ethics with every decision we make and every action we take in the collaborative enterprise of education.

This is why it is a false assumption that simply teaching ethics will make unethical behavior go away. Lessons in character, including morality, are joined with every classroom lecture, laboratory discussion, or hallway conversation. We express our relationship to science and its practice by example as well as by word, with the former being perhaps the more powerful but with advantages from both. Far from an argument against formal instruction, this is a reminder that principled ideas must also be clear in practice. Otherwise, students can find themselves learning in the unsatisfactory and contradictory climate of *do as I say and not as I do*. The advantage of a formal ethical component to education is the usual one: while actual life situations are meaningful and complex, there is generally too much at risk, including real personal consequences, to allow the inexperienced person in the middle of those situations to have enough space for contemplation. Formal education allows students to begin their development in a relatively safe and supervised environment, where the most severe consequence is merely a grade or exam score.

In this paper, I will share some of the specific places where my colleagues and I have introduced a component of ethical decision-making into the undergraduate chemistry curriculum and why I think it has had an effect on our students' moral development. Kovac (4) and Sweeting (5)

have contributed greatly to these discussions, and Treichel's recent commentary on his undergraduate first-year course at the University of Wisconsin–Madison complements this piece (6). I also explicitly support the notion that a faculty member who engages these ideas cannot be isolated from them, so the moral development of an instructor will inevitably accompany this kind of teaching.

## Inclusion of Topics and Tasks as Formal Educational Components

### *Case Study Analysis in a Focus Group Format*

A group of 160 first-year students participates in our Structured Study Group (SSG) program within a conventionally organized 1000-student introductory course. These students earn Honors credit by participating in additional weekly 2-hour supplemental instruction sessions that are shaped along the lines of a "performance studio" in the arts. Assignments, in the form of common (not identical) tasks, are subjected to peer presentation and peer critique facilitated by upper-level undergraduate leaders who are hired by the college and supervised directly by me. Students in the structured study groups follow a detailed curriculum that encourages them to extend their learning beyond the course, to develop the kind of skills that we believe are attached to a deep mastery of the subject matter and its appended goals. Undergraduate juniors and seniors who have already demonstrated talent for and interest in developing teaching skills are the facilitators for these sessions (7, 8).

The weekly assignments usually involve students in analyzing and creating examples within a given context, perhaps finding an acylation reaction in the primary literature and reformulating it as a problem for their peers. In the first term, some of the advanced topics included in the SSG curriculum are an introduction to frontier molecular orbital theory, analyzing a published paper and meeting with its author, and case studies in research ethics. In their curriculum packet, students receive a copy of the article "A Case for Ethics" (3), along with a written introduction to the area of research ethics. They are provided with a set of case studies on which classroom discussion will be based. Students are asked to write a short reflective piece on the published article in order to get them to think seriously about the ideas. We also provide them with the following leading questions to have in mind as they read through the cases and prepare for the discussion.

1. What are the possible courses of action for the different individuals involved in this situation? What ethical questions are raised by each alternative?
2. What principles can be used to decide which action is the best?
3. Having decided which course of action is the best from an ethical point of view, are there practical considerations which might make this strategy difficult to implement?

4. To whom might you turn for advice on what to do in this case?

The student reactions to "A Case for Ethics" vary considerably. Their written reflections provide the leaders with an ideal departure point for discussions. Box 1 shows excerpts from representative student reflections (October 1998). Box 2 gives excerpts from some of the cases we have used (9). During the SSG meeting, the case studies are examined by 3–4 groups of 4–5 students along with their SSG leader. For each case, the responsibilities of discussion leader and recorder are rotated within the group. The leader facilitates a class dialog after the groups have deliberated the case.

#### Box 1. Some Student Reflections on "A Case for Ethics"

In answering these questions we must always remember to take into account all the possible alternatives, their ramifications, their effectiveness, and all other practical considerations. Each case must be taken one at a time and the decision on the problem must be deliberated in full before any action is taken.

I was shocked to see that scientists would actually falsify data, I did not really know that happened. I guess I am naïve.

Ethical decision-making is everywhere in the scientific world. It is vital to see a reduction in the cases of scientific misconduct. The way to bring this about is education. It will not solve the problems, but it will make more people think about ethics.

I think that a lot of ethics learning is done before students come into the classroom. I think it is an impossible task to try and teach someone ethics, since most people have decided long ago how ethical they are going to be.

This is the important point: that we learn by the example set before us by our teachers...they must be ethically adequate in order to be good teachers to us.

I do not believe it is permissible, but I can understand how a student might feel pressured into committing unethical acts. In many labs or classes, students are penalized for incorrect data or late work, and so under the pressure of time constraints, many students falsify their data and results or copy someone else's. That is one of the reasons I like the self-paced structure of the Chemistry 211 lab: it relieves much of the stress of "keeping up" and I am sure that if you were to question the students, you would find fewer incidents of cheating.

#### Box 2. Excerpts from Two Representative Case Studies

You are an undergraduate research student engaged in the study of substituent effects on the rates of reaction of a particular class of compounds. After performing a careful set of triplicate experiments, you go to your research director with a graph of rate constant vs polarity. With the results of 10 different systems plotted, 8 of the 10 fall nicely on a straight line, but 2 points are well above the line. Your research director is convinced that the two "deviant" points are in error and strongly recommends that you repeat those cases. What should you do?

After only a few days in your new lab, you notice that one of the senior students is quite open about what appears to be many questionable experimental practices: he does not really keep a notebook, but numbers a new page for each reaction he performs and scribbles out a little information about what he had done, sometimes only the date and the starting time. By now, his practices are quite well known in your particular lab room, and a number of jokes and asides by your labmates affirm your perceptions. Indeed, even the senior student has been heard to quip: "If I had done this the right way, I think the yield would have been 75%." When the research advisor comes to lab for a weekly update on progress, this student presents the data on the purified materials and reports a 75% yield. They have already published 3 papers based on his previous results.

#### Taking Advantage of an "Ethics Moment"

After participating in the Teaching Research Ethics (TRE) program at the Poynter Center in 1994 (10), I became sensitized to the idea of formal, explicit reasoning as a way to think about moral dilemmas. After 6 years of involving students and student leaders, I have seen the same thing in them that happened to me: the language of ethical decision-making permeates one's normal discourse and affects one's subsequent actions. It is common to hear my students talk in terms of this or that situation being a good ethics case and then proceed to analyze the situation in the same way they analyzed their classroom cases. Kovac (11) calls these situations taking advantage of an "ethics moment", namely, using whatever extemporaneous and appropriate situation that arises with students (or colleagues) to stop and reflect on the ethical dimensions and implications.

The excerpted email messages in Boxes 3–5 are examples of how incorporating case study analysis has opened faculty–student discourse on ethical decision-making and, as captured in this writing, permits students to open up their idea of what one can discuss in the context of a first-year chemistry course.

In the first example, Alan feels free to mix chemistry and ethics/philosophy questions in his email (Box 3). In the next example, Andrea inquires about the peer review process we use in the SSG activities and if this is related to the broad category of peer review used in assessing scholarship (Box 4). In the SSG program, as in all group work, there are times when a leader is faced with a dysfunctional group. This has given my leaders a chance to react to authentic dilemmas. Box 5 shows an exchange forwarded to an SSG leader from a woman student athlete who was in a group with three men who were isolating her from participating in the group work. This moment opened a perfect opportunity for the leader and me to examine options, and for the leader to intervene with all four group members.<sup>1</sup>

An ethics moment can also be a more elaborate assignment. In the fall 1999 semester, the SSG students examined the

#### Box 3. A Multidimensional Email Inquiry from Alan

To: Brian Coppola <bcoppola@umich.edu>  
From: Alan Student <astudent@umich.edu>  
Date: Tuesday, April 07, 1998 3:03 PM

1. See if my 210 final is still hangin' 'round your office.
2. When you were talking about how indicators work/we see colors tonight, that made me wonder how those visualization dyes for TLC work? Because it doesn't seem like those dyes actually react with the substances that you're testing, so how do dyes/visualization methods know where the substance is?
3. I'm a little confused as to what chapters we should read for this last part of the year? (19, 22, and 23?)
4. Are you going to be on sabbatical next year? If so, will you be around during the summer or the campus during the 98–99 school year?
5. You explained the view about how the belief in a higher moral authority is essentially an outcome of natural selection, and I was wondering if, as a scientist, it bothers you that everything we know relies heavily on experience/observations which presumes that the future will conform to the past? It seems like our reliance on experience as a guiding force can also be considered to have sprung from natural selection. Just as there is no evidence for the existence of a higher moral authority, there is no evidence that there exists a certain uniformity of events in the universe.

**Box 4. An Exchange with Andrea about Peer Review**

To: Brian Coppola <bcoppola@umich.edu>  
 From: Andrea Pupil <apupil@umich.edu>  
 Date: Monday, April 06, 1998 20:08 PM

I was reading your article, "A Case of Ethics", and I was curious to know how peer review relates to chemical ethics and how that applies to the peer reviews we have been assigned in the SSG?

To: Andrea Pupil <apupil@umich.edu>  
 From: Brian Coppola <bcoppola@umich.edu>  
 Date: Wednesday, April 08, 1998 06:33 AM

In general, ethics impinges on peer review when the reviewer has a potential conflict of interest. In reviewing grant proposals (to award money), a reviewer might be a collaborator (or competitor). ...another issue is in reviewing publications as an editor. If you are working in an area... There are also some interesting studies that have been done about the sexism displayed by reviewers of scientific papers written by women authors. ... Although none of the other issues pertain directly to the SSG work, it would be interesting to know if you or any of the other members of the class have experienced any sexism in this student-review process.

To: Brian Coppola <bcoppola@umich.edu>  
 From: Andrea Pupil <apupil@umich.edu>  
 Date: Thursday, April 09, 1998 20:17 PM

Ethics and gender in peer review seems to be a very interesting topic. I can not say I have experienced this, but I can imagine it might exist in my SSG even if it is not overt. In fact, your response piqued my interest so much I decided to compose another ethics case regarding sexism ... and I think this will make a good topic for a paper in another class.

moral defensibility of the decision made by the Kansas State Board of Education to remove references to evolution in its statewide assessment examinations. They also considered the Kansas science teacher whose classroom practices started the controversial sequence of events. As a follow-up to these discussions, I asked each student to assume the role of the student member of an advisory board to a fictitious National Science Organization. Each student was responsible for drafting a 350-word reply to the Kansas Board's decision. Subsequently, the students reviewed and critiqued each other's writing in small groups, then discussed and revised their statements. Finally, the students met together for a 90-minute group session. I invited some of my colleagues to facilitate the discussion, a professor of English who specializes in religious texts and a professor of Philosophy who has taught a course that included the evolution-creation debate.

For an hour and a half, the students offered and replied to a variety of standpoints that one could take in support for and in objection to the Kansas Board's decision. Topics ranged over the nature of open discourse, the unique place for scientific instruction in education, the variety of opportunities for religious study, the nature of theories as testable hypotheses, the roles of trust (between teachers, students and the community), faith and belief in understanding, issues of democratic freedom in educational choice, open- and closed-mindedness (in classrooms), and so on. The indefensibility of the teacher's behavior was an important topic, too, in a broad discussion about the general responsibility of educators. Students shared openly their own experiences in secular and nonsecular education, and how these related to the positions they could or could not defend.

My students also examined the statements issued by the American Chemical Society, the National Science Board, and

**Box 5. A Dysfunctional Group Gives an SSG Leader an Authentic Case to Deal With**

Date: Mon, 8 Mar 1999 20:08:55 -0500 (EST)  
 From: Tim Reader <treader@umich.edu>  
 To: Sheila Sport <ssport@umich.edu>

We are meeting again tomorrow (Tuesday) in the SLC at about 6:15. You should have come today, we did a lot.

Date: Tue, 9 Mar 1999 16:17:17 -0500 (EST)  
 From: Sheila Sport <ssport@umich.edu>  
 To: Tim Reader <treader@umich.edu>

Too bad. I told you that I had practice. I have it every Monday at six and every Tuesday at four. I'll see you today, but I'll probably be late as I'll have to eat first.

Date: Tue, 13 Mar 1999 06:13:06 -0500 (EST)  
 From: Mike Follows <mfollows@umich.edu>  
 To: Sheila Sport <ssport@umich.edu>

We are meeting tonight at 10:00 in the Angell Hall computing site lobby. See ya there.

Date: Tue, 13 Apr 1999 20:07:01 -0400 (EDT)  
 From: Sheila Sport <ssport@umich.edu>  
 To: Mike Follows <mfollows@umich.edu>

Hey, what's the deal with the short notice? There is no way I can make that. I have a meeting for another class. Please tell me what you guys have left to do so I can do it. I mean come on, Tim [expletive] lives in my hall, I find it really hard to believe that he can't stop by and give me the details on what is going on or find something that needs to be done to give me. We see each other every day in lecture, and yet no one can let me know what needs to be done? I know that I haven't been to the meetings, but I tell you guys that I can't make it or it's gonna be really hard and no one seems to care. I mean I have already given up a lot for this class besides peace of mind and that includes practice, and I feel like I did it for no reason. I'm sure you guys are also annoyed with me, but there are times that I have met up with you and all we seem to do is sit on Tim's floor while he rants and raves about something that has nothing do with our project or we go to the SLC to look for mp's. It seems that the only time we get stuff done is when I'm not there and I'm really disappointed. Maybe I should have said something sooner, but I am saying something now.

the National Science Teachers Association. None of the students found either argument in the ACS Statement persuasive, namely, adherence to the National Science Education Standards ("this or that should or should not be taught because this organization says so") or future employment arguments ("you won't get good jobs") as defensible choices. The world's largest scientific organization, in my students' view, should have shown greater moral courage and intellectual strength in defense of science, scientific theories, and science education (12).

**Case Study Instruction (Learning through Teaching)**

Instructors take a more explicit role as moral authorities when they incorporate ethical decision-making in their teaching. Reflecting on my personal experience, I have been deeply affected by organizing course components that address these issues. I find myself better able to analyze situations and help educate others when they come to me for advice. Straight-forward rubrics, such as considering the effects of decisions on various stakeholders in a given situation, have made my decision-making more comfortable and confident. It is important to remember that ethical reasoning does not prescribe an outcome or a particular moral perspective, but only the process of getting to the most defensible position. One's thinking is



**Box 6. Teaching Ethics Cases Affects the Teacher As Well As the Student**

To: Brian Coppola <bcoppola@umich.edu>  
 From: Alice Leader <aleader@umich.edu>  
 Date: Wednesday, April 20, 1994 2:34 AM

I am sitting here working on my thesis, and I have just one thing to say to you:  
 Damn you for making me think ethically!!!  
 Have.A.Good.Night.

**Box 7. Students Receive Brief Instructions before Writing Their Own Case Studies**

A few weeks ago, all of the groups participated in discussions of some more ethics cases. Many students reflected on their own lab and course experiences during these discussions. For next week, you should draft a case study of your own. Here are the ground rules:

- As in all writing assignments, sticking to real experiences is the best strategy.
- Do not use real names.
- Create scenarios in a non-judgmental way.

Create a first draft version (in duplicate) of your suggested case. Your group will review and edit these next session, and you will use that feedback to rewrite your case.

**Box 8. Examples of Student-Generated Cases**

*Example from April, 1998:* You are a third year student taking a chemistry course at the University of Michigan. Your best friend from high school is a senior and she is in the same major as you. She has therefore taken many of the classes that you are taking now. In order to help you out, your friend gives you her old chemistry tests, notes and her lab notebook. Although you thoroughly enjoy chemistry lab, you have become frustrated lately because none of your experiments seem to be working the way that they are supposed to. Your lab instructor has been giving you low grades because you had the incorrect data. Amidst your frustration you recall that your friend not only gave you her laboratory notebook, but that she also got an A in the course. So as you work on your last chemistry lab report, you notice that the results disagree with those of your peers. When you check your friend's old notebook, you see that she had worked on the same substances as you. Do you copy the information from her report? Do you suck it up, turn in your results even though you know your grade will suffer? What about just copying results from someone else from your class who worked on the same stuff?

*Example from 1997:* Your TA is very strict about cross-contamination of laboratory materials. One day in lab you are rushed and cannot find any clean poly-pipets, and you just do not have the time to wait in line at the stockroom to get some, so you decide to grab the nearest, used poly-pipet and hope for the best. Your reaction turns out fine, but later you hear that another person in class is having trouble and has used the chemical you may have contaminated. If the bottle is now considered contaminated, how will this affect the way the TA looks at your results, which turned out okay?

*Example from 1995:* You have been attempting to synthesize a "bis" carbonyl product in lab for three weeks, and you are falling behind. You finally develop what you think is the "bis", although you think it might be contaminated by the "mono" version. You painstakingly recrystallize your sample, then run an IR on a small sample. The evidence is consistent with pure "bis". As you are setting up your TLC plate, you drop the entire sample onto the floor. When you retrieve the sample and TLC it, you get two spots (indicating that the "mono" could be there, or that you have picked up contaminants on the floor). If you wait until the next lab to re-synthesize it, you will be even further behind. What do you do?

impacted greatly by the frequent need to explain one's reasoning to others. As a habit, it also spreads to others by example. Moreover, it is difficult to take a public stand as a moral authority on ethical practices and then behave in an immoral way when the time comes to make a decision. A wonderful example of this comes from one of my SSG leaders who had been facilitating case study discussions for two terms (Box 6).

In March, 1999, two of my SSG leaders were worried about the lack of a certain piece of software in our Science Learning Center (SLC) that their students needed for a project. The University's site license did not extend to this facility. Because of other hardware demands, however, the students needed to do their work at the SLC. In a previous year, one of the students in the course managed to duplicate a pirated copy of the needed software onto the computers, and the class took a "don't ask, don't tell" approach (especially with the faculty instructor) to the situation. The copies were purged during routine summer housekeeping. In March 1999, the situation arose again; this time the leaders had been part of the class of students that used some pirated software in 1997. The leaders came to me after having discussed the dilemma of unavailable software and the request from some of their students. One of my leaders asked me the key question: "Even though it would be really nice to have the software to use at the SLC, how could we support this behavior after standing up there for two terms representing ethical practices?"

**Case Study Writing (Reflection and Peer Review)**

We ask the first-year students who have participated in two rounds of case study analyses in the SSG program to generate, revise, review, and refine cases of their own. This is drawn directly from my experience during the 1994 Poynter Center program, where one of our culminating assignments was to create and collaborate on a case study of our own.

I give my students brief instructions (Box 7). A few examples from the student writing follow (Box 8). Some of these cases are then used in subsequent years. For better or for worse, students' experiences in their laboratory course are a constant source of inspiration. I am not proposing that examining a handful of cases and then writing and revising one case is a remedy for academic misconduct, but it is a jumping-off point that can sensitize students to the issues. As among the leaders, the discourse in informal conversations with these students often integrates references to ethical practices and looks at events as "case studies". I am gratified that my students seem to abstract a generic lesson from these specific, idiosyncratic examples. It suggests that this is an appropriate introduction to ethical reasoning. At the beginning of 1999, one student wrote a second, satirical case as a follow-up to the writing assignment. I am including this example (Box 9) because it is an impressive indication of how attuned to the culture of misconduct a first-year student can become through the explicit consideration of research ethics (the better the satire, after all, the deeper the understanding of the subtext).

The SSG program has provided a number of useful points for introducing ethical reasoning into part of the first-year program. While this is a valuable addition to the curriculum, it is still being provided for only 10–15% of the students in the course. Because most of the future chemistry and biochemistry majors end up enrolled in the SSG program, I am happy to be exposing the majority of my department's future B.S. students

**Box 9. Every Case Study You've Ever Read: A Satirical Case Study**

You are an SSG Leader for Chemistry 215HH. Over the course of the term you notice that the papers of two of your students, your sister Katie and her subgroup partner Jennifer, are remarkably similar (so similar that often you'll receive two papers with Katie's name on them—one of which is, in fact, Jennifer's). During a quiz you notice Jennifer ripping Katie's paper from her hands. You suspect that at this instant and throughout the course of the term that Jennifer has been cheating off of Katie, yet you are unsure how to approach either of them about the situation. To make matters worse, Jennifer's uncle, Dr. Malevolent, is both the chairman of the chemistry department and your research advisor. Not only this, but you suspect that Katie has been stealing gallic acid from the Malevolent lab in order to produce mescaline and sell it on the street. On top of all this, she is to marry Dr. Malevolent tomorrow and has selected one of his senior students, Chris, as the best man. This despite the fact that in the 5 years Chris has worked in the Malevolent Lab, he hasn't actually seen the lab nor has he run any reactions.

In hope of resolving the issue, you approach Katie's Lab GSI. You find her running H NMRs on live cats named Anion, and as she turns to see you staring at her insane work, she quickly hustles you out of the NMR room. She reminds you that Jennifer is cheating herself at which point she rushes back into the NMR and locks the door.

Confused, you turn to the professor of the class and ask him what to do. He refuses to speak to you since you were unable to finish an experiment for him last term, which was crucial to the completion of a grant application. He didn't get the grant. As you leave him, you see tears welling to his eyes.

You return to the SSG room where you find Tim, the professor's brother and one of your SSG students, stealing pieces of chalk from the blackboard. He seems angry with you since you're allowing your sister to marry Dr. Malevolent who had previously dated Tim's great uncle's widow, the chairman of the physics department. Tim's third cousin is the Duke of Windsor.

It's 1 a.m. The wedding is tomorrow. Its 63 °F outside, overcast, and the breeze is North by Northeast. The nation is on the brink of all out war with Russia. What do you do? What are your options?

to these issues. We have not yet addressed the problem of how to introduce these ideas systematically into the mainstream course. Treichel's 3-part quiz (6) is a nice example of that, though. We have also used case studies involving teaching situations during our graduate teaching assistant training program. Anecdotally, we know that some of these graduate students become sensitized to a more reflective practice and this leads them to pass these habits on to their students.

**A Professional Development Capstone Course**

At the other end of the undergraduate curriculum, the department of chemistry has recently instituted a capstone course called Professional Development in the Chemical Sciences. The course is constructed around the variety of modes of expression that can characterize a life in science: written and oral, from short and long technical reports for various professional audiences to communicating with the public. The students in this course, nearly all of whom have participated in undergraduate research, once again revisit case studies in research ethics from the perspective of more experienced scientists. The majority of these students go on to graduate school or employment in the chemical industry, so there is a strong practical component to this discussion.

The "professional development" aspect of training chemical scientists includes but is not limited to research ethics. Perhaps partly as a result of the increasing number of

cases of unprofessional and unethical practices, we recognize that unspoken and implicit instruction is inadequate for the many practical and behavioral expectations of a life in science. As both academic and industrial scientists, we acknowledge the need to be more proactive in explicitly addressing the "rules of the game" of professional citizenship. Nationally, there is a ground swell of interest in how we introduce future scientists to the complex and challenging choices they must learn to make in their professional lives. Not only is the widely practiced trial-and-error method an unimaginably inefficient strategy, but the occurrence and consequences of professional malpractice are disturbingly high.

Some professional development issues occur naturally during the regular administration of courses, especially laboratory courses, and certainly in research, where issues in data and time management, authorship, and responsible behavior are encountered daily. Although formal discussion can become too decontextualized (or too focused on an incident), our broad-based course provides an opportunity to reveal some of the complexities of a professional life in science to students in their relatively safe and supervised environment.<sup>2</sup>

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**Notes**

1. The text in Box 5 functions well as a case study for the reader. I have only represented it as the case of a dysfunctional group. One of my reviewers immediately concluded it is a case of sexism. We too entertained that possibility when the group's problems boiled over, but after my student leader discussed the situation with the students involved, it was clear that this was not the case. None of the parties considered sexism to play a role in this situation. This was an extremely valuable experience for the student leader in how not to jump to one conclusion on the basis of surface features (SSG leader reflection: "no one was completely innocent, and a lot of problems could have been avoided if everyone would have come to me earlier"). Another reviewer argued that if this was not a case of sexism then the impact of the example was diluted. On the contrary! I would argue it is too easy to jump to a verdict of sexism, and the case stands as an important reminder to gather facts before making judgments.

2. Additional details about the Professional Development course will be published separately.

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