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Cross-Pollination: Building a Co-Taught Course to Examine Art and Sex Through the Lens of Botany

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Nearly a decade ago, Bucknell University—a small, private, liberal arts institution in central Pennsylvania—instituted a new sophomore-level requirement titled Integrated Perspectives (IP). Taught by instructors from two different disciplines, courses under the IP umbrella are meant to introduce students to an area of study through the combined efforts of professors whose disparate academic backgrounds meet in a sort of pedagogical “sweet spot.” When successful, this approach challenges both the students and the professors in often unexpected ways, with varying degrees of both discomfort and engagement that can engender impactful learning outcomes.

Driven by overlapping interests in plants, art, and diversity in sex expression, Anna Kell (Department of Art and Art History) and Chris Martine (Department of Biology) developed a course that integrates the perspectives of a visual artist and a botanist. *Art & Sex Through the Lens of Botany* seeks to impart the importance of making connections across disciplines and the value of visual literacy across academic lines. The

course introduces foundational concepts in each field and encourages students to integrate and explore these different systems of knowledge and their intersections.

In addition to developing fluencies related to both general botany and studio art, the goal of the course is that students demonstrate a variety of new strengths including (1) the ability to recognize, construct, and evaluate connections among different intellectual methods, ways of learning, and bodies of knowledge; (2) the ability to identify the various parts of a flower and discuss their significance and role in sexual reproduction in plants; (3) increased awareness of visual forms of communication, including artistic expression, data visualization, and observation; and (4) a broader understanding of the role of sexuality in the science of biology and in the formation of cultural beliefs and biases. Through these approaches, students engage in cultural dialogue regarding our perceptions of normativity in sexual expression—often using the flower (including its depiction in art) and the wide variation in angiosperm sex expression as a starting point. By examining the impressive diversity of sexual systems and forms present in flowering plants (through dissections, microscopy, comparative approaches, and artistic representation), students are consistently challenged to question what is “normative” when considering the myriad means by which organisms (including our own species) “do” sexuality.

As they build their botanical acumen, students are then challenged to create artworks applying their evolving knowledge and understanding to their own perceptions and experiences related to sexuality, gender expression, and other sociocultural issues or cultural phenomena they identify as important to them. The hope is that this interdisciplinary approach to botany and art not only gives students a new (or initial) appreciation and understanding for each academic discipline, but also gives an awareness of the ways these students might contribute meaningfully to cultural dialogue (including on topics related to human sexuality) through the integration of science and art.

The pedagogical mission of the course is largely achieved through hands-on lab experiences and creative projects, each requiring extended course periods and ample teaching/work space for the typical enrollment of 24–30 students. The current iteration of the class meets twice a week for 80 minutes and occupies two adjacent lab classrooms with large open bench spaces; there is also dedicated space in our nearby collections spaces for storage of in-process and completed assignments. Students in the course complete a number of “sci-art” projects, including the following examples:

1. Wearable plant-pollinator interaction art pieces in which the pollination process is performed and recorded in short video clips. Done in groups, this activity promotes an understanding of coevolution, coadaptation, and biological interactions. For example, a group of students majoring in Math, Neuroscience, Studio Art, and Management constructed costume pieces that were worn as part of a greenhouse-based “ballet” performance in which the Math student (also minoring in Dance) played a *Trochetia blackburniana* flower visited by the Neuroscience student acting as a day gecko.

2. Repeated pattern wallpaper designs inspired by plant reproductive strategies including, in one case, a treatment reflecting on the deception associated with bee orchid (*Ophrys*) pollination and, in another, the sex-changing and thermogenic habits of skunk cabbage (*Symplocarpus foetidus*).

3. Projects using herbarium paper as a canvas, including:

- Artistic documentation of floral dissections using various species and reproductive morphologies, with attention to representations of “maleness,” “femaleness,” and cosexuality.
- “Cultural specimen” sets expressing a particular feeling, place, personal experience, or wider cultural phenomenon. As an example, one Biology student cut a Pride flag into scraps and then re-assembled them into specimens of national flowers for countries in which being gay is considered a crime. These were then mounted as herbarium specimens with labels identifying the countries and the sentencing associated with the “crime” of homosexuality.
- Bio-cultural commentaries built around scraps of textiles featuring floral motifs. For example, student Sophie McQuade (Figure 1) chose a swatch of fabric featuring a bleeding heart (*Dicentra*) in flower as an inspiration for a reflection on queer identities.



Figure 1. “Bleeding Hearts” by Sophie McQuade, 2021, gouache on herbarium paper. A bio-cultural commentary created around a single round piece of cloth (upper right) with a floral motif representing a bleeding heart (*Dicentra*). Artwork completed as part of the Art & Sex Through the Lens of Botany course at Bucknell University (Lewisburg, PA, USA) and included with permission from the artist (Instagram @sophiemcquaideart).

At the conclusion of each semester of the course, Bucknell’s Rooke Science Center becomes a gallery space where students in Art & Sex Through the Lens of Botany display their work as part of a short-term exhibition—with the entire campus community invited to the opening. Some of

the pieces have now hung in hallways, labs, and classrooms for years, alongside research posters and bulletin boards displaying journal articles and campus flyers—a daily reminder that creativity and art have a place in the teaching of science.