POST WEDDING FAQS

ALEX MCDONOUGH AND JULIA SCHEDLER

Thank you so much for everyone who came to the wedding, as well as for the support from those who couldn't make it! Some guests mentioned appreciating the FAQs on the wedding website, so we thought we'd make a post-wedding FAQ as well. For legal reasons, We feel obliged to disclose that not all of these questions were frequently asked, and many were not asked at all.

Before we get to the FAQs, we want to mention our biggest oversight; not thanking our local friends for being our devoted wedding minions as the beautiful details came together closer to last minute than comfort: Emily, Charlotte, and Zoe. Additional thanks to Jacquelynn for picking up the seating chart, Sarah J for picking up the forgotten (by employees) easel for said seating chart (the Staples employees were extremely curious about the table numbers), and also Charlotte and Zoe again for formatting it!

How is the married life?

It's great! Similar to the engaged life, but now we don't need to plan a wedding. Also, *wife* and *husband* are much easier to type on an American keyboard than *fiancé* or *fiancée*.

Who were your vendors?

Please consult the table below. Big thanks to Julia's colleague Jeanine Scaramozzino for being the best librarian ever and also for recommending Brick and Mortar!

Food	Brick and Mortar Catering Company
Music	The Loving Mosh
DJ	DJ KlusterFunk
Cupcakes	Seabreeze Cupcakes
Venue	The Octagon Barn
Art Curation	Julia Schedler
Game Curation	Alex McDonough
Jewelry	Waqaq Art

TABLE 1. McDonough/Schedler Wedding Vendors

In her vows, Julia promised to play a game of Spirit Island on the day after the wedding. How did that go?

It was wonderful! As promised, Julia played as *Lure into the Deep Wilderness* with the *lair* aspect. She also helped Alex pick a spirit, and he ended up choosing *Finder of Paths Unseen*, a hummingbird who alters the topology of the island. We played against the Bradenberg [sic] Prussia adversary at level 4, since this tends to lead to a relatively fast game without any adversary-specific rules to remember.

Everything went according to plan! Julia set up a destructive lair, while Alex isolated some lands to prevent explores. In the late game, Julia played *Unlock the Gates of Deepest Power* and gave Alex the *Manifest Incarnation* major power. Alex then used this power to spark extreme terror for the invaders, although he had to lose a few presence since he felt bad about all the destruction he caused (the hummingbird doesn't like violence).

In the end, we achieved a terror level 2 victory while keeping the island healthy! Next time, we might bump up the difficulty a bit. A few pictures from the game are given in Figure 1.

What was up with the table numbers? Before spending an unreasonable amount of time diving into the technical details, let me mention a few things that people mistook for puzzles. First, the ordering of the tables was completely irrelevant, and was meant to be more or less random. Second, the fact that the table numbers on the seating chart didn't quite go from smallest to largest was just an oversight on our part. Third, we do not know of any connections between the table numbers and the tiles, or anything else at the wedding.

FIGURE 1. Here are a few pictures from our first post-wedding spirit island game. On the left is the setup, and on the right is partway through. Experienced players might be confused about what "The Endless Dark" is doing. We used it to help fit all of the pieces on Julia's lair, which makes sense thematically, since her lair was in a dark forest.

As a reminder, the sequence of table numbers was:

1
3
15
105
945
10395
135135
2027025
34459425
654729075
13749310575
316234143225
7905853580625

We chose this pattern of numbers because it vaguely relates to both of our research interests. It's not at all obvious why this is true, but the pattern itself isn't too tricky to understand and doesn't use anything outside of elementary mathematics. We encourage you to spend a few minutes trying to figure out the pattern before reading further.

One of the most useful tools to learn about sequences of numbers is the *On-Line Encyclopedia of Integer Sequences* which can be found at `oeis.org`. After typing in a few terms, you can find a description of the sequence as well as some relevant references to learn more. This particular sequence is filed as number A001147 on the OEIS [OEI25].

Interpretation 1: Double Factorials: One interpretation of the sequence is taking the product of odd numbers. The first value is 1, the second is $1 \cdot 3$, the third is $1 \cdot 3 \cdot 5$, and so on. Congratulations to Wilson Miller for being the first person to figure this out and let me know! There is no prize besides a spot in the FAQs, especially since it's entirely possible that someone else figured this out earlier.

A mathematician might express the n^{th} term of this product as

$$(1)(3)\dots(2n-1) \quad \text{or, more formally, as} \quad \prod_{i=1}^{n}(2i-1).$$

However, there is also a nice notation that exists specifically to express this product: we can write it as $(2n-1)!!$, pronounced $2n-1$ *double factorial*. There was a part of me that wanted to have the seating chart list tables $1!!, 3!!, \dots 25!!$, but then have the full number at the table. However, I figured that some people don't want to spend a party multiplying large numbers, and there could be some serious confusion between people at table 5!! and people at table 15!!.

Interpretation 2: Perfect matchings of complete graphs: The link to Alex's research is that $(2n-1)!!$ is precisely the number of *perfect matchings* of a *complete graph*. We'll avoid the graph theory language by giving an example that could have occurred at the wedding.

Suppose that a group of wedding guests decide to play a Cornhole tournament. Before they start playing, they need to all pair off into teams of 2. How many different ways can this be done?

With 2 people, there is just 1 possible pairing.

With 4 people there are 3 possibilities. To see this, choose one person (let's call him Frederick). There are 3 different people that Frederick can pair with, and then the remaining 2 people will pair with each other.

It turns out that if there are $2n$ people, there are always exactly $(2n-1)!!$ pairings. This is a fun little exercise to try to prove, and something that might appear in an intro combinatorics class. A good first step is to list out all 15 possible pairings when there are 6 people at the party.

Interpretation 3: Even Moments of a Standard Normal Distribution: The link to Julia's research is to even moments of a standard normal distribution. A *standard normal distribution* is a bell-shaped curve with average 0 and standard deviation 1. The k^{th} *moment* of a distribution is the expected value of the k^{th} power of value selected according to this distribution. When k is odd, the expected value is 0 (which is one reason why we put our odd selves at table 0).

By definition, the k^{th} moment of the normal distribution is given by

$$\int_{-\infty}^{\infty} \frac{x^k}{2\pi} e^{-x^2/2} \mathrm{d}x$$

Incredibly, when k is even (let's write $k = 2n$), then

$$\int_{-\infty}^{\infty} \frac{x^{2n}}{2\pi} e^{-x^2/2} \mathrm{d}x = (2n-1)!!$$

We learned about this fact from [God17]. However, the result never explicitly mentioned the normal distribution, and just intended to give an integral formula for computing perfect matchings of complete graphs.

After some further research, we found that the connection between Interpretation 2 and Interpretation 3 follows quickly from something called either Isserlis' theorem or Wick's probability theorem, which was first proven in 1918. According to some guy named Yury on a theoretical computer science forum, "The proof of the theorem is not difficult at all. Also I think that its statement is not surprising"[Yur17]. We can't say that we agree with Yury on either claim.

In Henry's best man speech, he said that we took him to Blaze Pizza 3 times in a 3 day period in Davis, CA. Why do you like Blaze Pizza so much?

We believe that Henry is mistaken in this memory. We did go to Blaze pizza once, right after Henry's mental fortitude was put to the test in a grueling game of Spirit Island. Our theory is that parts 1 and 2 of the game were turned into pizzas by Henry's brain. Blaze Pizza is fine, but it's not our favorite.

Why did you complain about Zola in the website FAQs? What annoyed us most about Zola is that they try to hold your hand through the process to do things exactly their way, instead of giving any flexibility. For example, if you put 2 guests as a couple or a family, then you must list any additional family members as "children," and are not allowed to offer any plus ones. Furthermore, if you don't know the name of a plus one, Zola gives a somewhat aggressive "Guest Name Unknown," which I'm sure some of you saw when RSVPing.

Another frustration was that we couldn't list the Ceremony and Reception as separate events on the schedule unless we asked guests separately to RSVP for them. We ended up needing 3 events: Ceremony, Reception, and Ceremony & Reception, with the latter invisible on the schedule and the first two excluded from the RSVP.

References

[God17] Chris Godsil. *Algebraic combinatorics*. Routledge, 2017.

[OEI25] OEIS Foundation Inc. The On-Line Encyclopedia of Integer Sequences, 2025. Published electronically at `http://oeis.org`.

[Yur17] Yury. What is the connection between moments of gaussians and perfect matchings of graphs? Theoretical Computer Science Stack Exchange, 2017.