2023

Girls' Programming Network

Annual Report

Table Of Content

CEO's Message

To our community of sponsors, partners, volunteers, and participants, I want to start by sharing my immense gratitude for all that you have brought to our Girls' Programming Network in 2023.

This year we have seen the growth of all of our nodes Australia wide, with a special spotlight on Melbourne and Perth which have reached the 100 participants or higher mark during 2023. With the original Sydney node now back in full swing after a break due to COVID and a move to UTS, we are comfortable at our new home and looking forward to pushing attendance back to pre-COVID numbers in 2024, with targeted marketing to Sydney schools. Our investment in continued contact with our wider community has resulted in a large tutor population full of former GPN students who have graduated during the COVID period. This puts us in the happy position of being ready to take on an influx of students, as we hope to boost our enrolments from 130 back towards the 180+ of the past.

The Tech Inclusion team is proud of the community recognition we received this year, including an award at the Women in Security Awards for "Most Innovative Educator" in Cyber Security. Our COO, Alex Penna, was also a finalist in the Best Volunteer category, along with several tutors who were finalists or award recipients at events around the country celebrating their technical achievements. Our community is also lucky to have many dedicated educators, including Donna Buckly, the recipient of the 2023 Prime Minister's Prize for Excellence in Science Teaching. On a personal note, it was an honour to receive the Champion of Change award at the Women in Digital Awards 2023 for my impact through Girls' Programming Network and Tech Inclusion. These events have been an invaluable platform to showcase our impact and invite industry partners to join our mission.

Financially, 2023 has been a history-making year for Tech Inclusion, with Atlassian coming on board as our first Platinum sponsor for our flagship program: Girls' Programming Network (GPN). This injection of funds has been a game changer for the outlook of GPN, allowing us to increase our productivity and sustainability with improved tools.

We are also looking forward to putting some of the funds towards paid administrative support in 2024, taking some of the pressure off our volunteer exec team.

With these improved processes and increased bandwidth for our exec team we look forward to increasing the rate of growth in 2024. We already have plans underway for the establishment of a GPN Adelaide node in the first half of the year. Our aim is also to establish a Brisbane node by the end of year. We also appreciate the support of BMD, through their Community Grant program that will be bolstering our funds to provide the upskilling and resources needed for both of these projects.

Our growth for next year won't be limited to reaching new areas and growing existing nodes, as we are also expanding to new age ranges. A new GPN Junior pilot program is set to run in Sydney from term 1 2024, with the support of UTS. This program will have year 3-6 students participating in a half-day event with hands-on coding activities and unplugged games. We look forward to working out how this program runs best so we can roll it out across the network in the future.

It is only with contributions and support from all of our stakeholders across the country that we find ourselves running into the next year and into the future with the wind at our back. We look forward to continuing to grow the reach and impact of our programs and creating more life-shaping communities and moments in 2024 and beyond, thanks to your ongoing support.

Yours sincerely,
Renee Noble
CEO

Meet our Network

ALEX PENNA
GPN SYDNEY LEAD

This year has been a great year for learning at GPN Sydney! We ran our first full year of workshops since the pandemic in our new home at UTS. Getting to work with the UTS staff has been amazing. They are so passionate about what they do, and we couldn't have run GPN this year without their support.

Since the pandemic, many of our students have left high school and have joined the GPN tutoring team this year. We can't wait to grow our student numbers even higher in 2024 now that we have the largest tutoring team we've ever had to support them!

One of my highlights of this year was getting to run another Micro:Bit workshop and seeing the creative light-up playdough sculptures our students made in the after-lunch electronics activity in Term 4!

RAMA KAORMA
GPN MELBOURNE LEAD

Another fantastic year at GPN Melbourne! We've seen a huge increase in student numbers, nearing a hundred students per workshop! With the dedication of our tutors and Unimelb staff, we were able to manage six classrooms across two buildings and resolve technical issues on campus to run our Micro:Bit workshop. We now certify our tutors with an online certification to recognize their leadership involvement through the Melbourne Plus initiative, thanks to the support of Unimelb staff. I'm personally thrilled to lead GPN Melbourne next year to increase our numbers and support women in tech!

SHEREE PUDNEY
GPN PERTH LEAD

2023 saw GPN Perth grow quickly and we had more than 100 students at a workshop for the first time. Perth GPN moved from ECU to UWA and we adopted a BYOD approach with laptops being provided for students who couldn't bring their own. UWA has been extremely supportive and we look forward to growing the partnership in 2024.

We welcomed many new tutors and ran new tutor briefing sessions to ensure our tutors feel comfortable, supported and part of our great team. In 2024 we look forward to involving more of our tutors in room lead and organisation roles to ensure we have the expertise and coverage for our growing student numbers.

We look forward to reaching out to even more students in 2024 and helping them 'find their tribe' as we focus on building that sense of belonging that is so crucial to attracting and retaining diversity in tech.

GPN CANBERRA

This has been another great year of learning for GPN Canberra, with a good mix of those attending for the first time as well as repeat participants. Throughout the year, we covered themes from Cryptology and Markov Chains through to Micro:Bits and how to build a Secret Diary Chatbot.

Term 4 also saw us start offering GPN workshops only to girls from years 5/6 with text based programming experience through to year 12 students. This was to better align with the other nodes and the content being geared to a slightly older cohort.

We were lucky enough this year to have a year 11 previous participant offer her expertise as a student ambassador. Overall, we have had consistent and passionate tutors, from across ASD and beyond, volunteer their time and ultimately help build the next generation of Professional Women in STEM.

We look forward to growing our student reach and attracting even more tutors into 2024!

STEPHANIE CLAYTON
GPN BURNIE LEAD

2023 was a strong year for GPN Burnie, with a workshop each term, and seeing new and regular faces. UTAS Cradle Coast campus has continued to be a wonderful venue for GPN.

Although saddened by the discontinuation of Fantail lollies, curried egg sandwiches remain a firm lunchtime favourite for our local participants! We had 2 fabulous tutors join us this year, one of whom runs her own website design business and shared her entrepreneurial journey with the girls.

Having Vivian from GPN Sydney visit in person to run the Micro:Bits workshop was a highlight for 2023, with 15 girls participating. This was our most attended workshop in our short history! This visit was originally organised as part of our 2020 Tasmanian Community Fund (TCF) grant funding, but had been postponed due to COVID-19. It was amazing to finally make it happen, and the girls loved having Vivian there! A media duo from the local newspaper came along and created a great video featuring Vivian and some of the girls, along with lots of footage of the workshop in full swing, accompanied by a written article. It was great to have a spotlight on our GPN node!

For 2024, we will be looking for new local partnerships to help keep GPN Burnie running, and would love to see more women in industry join as tutors to give the girls more insight into real-world applications, and possible careers and study pathways. Personally, I have enjoyed doing more of the lectures, and seeing the girls continue to build their skills each workshop.

GPN Journeys
Claire Menzies

I first attended GPN in 2015 in Sydney, as an eleven year old with a basic knowledge of Scratch, motivated by the promise of pizza and lollies, and that if I didn't like it I didn't have to go again! I arrived, apprehensive and with my sister, got checked in, including receiving my lollipop from Josephine, and entered a huge room filled with girls. In general circumstances, this would be incredibly intimidating, but it was immediately apparent from the energy in the room that this was different. At GPN, girls have a common interest: they are curious enough or already passionate about coding, and are keen to spend time with others who feel the same way. Before I knew it, I was sitting and chatting with other girls and the tutors, playing a game of celebrity heads, picking up a whiteboard marker to play or playing some kind of game organized for us. Safe to say: I had so much fun and ate so much pizza that I kept coming back.

I am lucky that my parents, including my Dad, who has a degree in computer science, worked hard to get my sister Molly and I involved in coding from an early age. However, I would say that there were not that many people who shared this interest at my school, where, despite efforts, coding clubs still aren't very popular. I believe that without GPN, it's possible that I would have lost interest in tech - it's been an important source of encouragement over the years. Everyone I have met over my time at GPN has been passionate and positive. It's hard to estimate the number of GPNs that I have attended over my 8 years as a student, which included one delivered virtually during lockdown, which stood out as a highlight despite the challenges of that time.

GPN has been a major and regular source of encouragement for my interest in other tech and coding opportunities. Through my involvement, I found a number of mentors, including Alex Penna, one of the early Tutors I was exposed to, who taught me Python. As I got older, the topics shifted from learning code, to considering careers and receiving mentorship from real tech leaders through Mentor Hangz.

GPN helped give me the confidence to step up and lead my junior school coding club, be part of the Robotics team at my high school, and to successfully advocate for and formally propose that my school should create an elected position to lead Robotics. It enabled me to help build and code my team's Robot and to compete successfully at the National and World Championship level. It was through GPN that I learned about the National Computer Science Summer School, a ten day camp, which I participated in and further extended my skills.

GPN has also provided access to many strong and female role models, illustrating the diversity of careers in tech. It has helped me understand the many different ways to be involved in tech regardless of being a computer scientist or not. As a result, I am currently studying a Bachelor of Commerce at the University of Melbourne, and my electives have included computer science, where I have excelled. I am active in University Robotics, and feel confident in any tech settings.

Given all this, it's no wonder that a massive highlight for me in 2023, was being invited to GPN not as a student, but as a Tutor. I put on my green shirt with pride, something I had been looking forward to for a long time. I have benefited so much from GPN, and am so grateful for the opportunity to give back!

- Claire Menzies

Claire at her first GPN in 2015 as a Student in Sydney and as a Tutor in Melbourne in 2023

GPN Journeys
Sara Moad

Since I was young, I loved using the computer, but had little interest in understanding how the applications I used frequently worked. I lived and breathed dance and was fortunate to teach and perform in a professional company. However, Covid-19 changed all that. A career in the Arts was difficult during the pandemic and after working intensively with small children with few breaks, I realised this work was unsustainable. I needed a change. I still wanted to do meaningful work that would positively impact people's lives and I had friends in the tech industry, who explained to me the potential technology has to affect people's lives positively. This drew me to development because I realised that this industry was and is a field that continues to improve and innovate and I wanted to be a part of that process.

This change was a challenging one. What place did I have in this field with intelligent people who have been developing their knowledge since highschool? I had moved away from what I knew and moved into a field based on a different type of logic. It didn't help that anytime I told someone I was going into web development their response would be a long pause, a look of disbelief and a "Oh… really?" However, I was fortunate to have friends who worked within the industry and with their advice and recommendations, I began to develop my fundamental skills through self-learning online and the resources they provided. Through a variety of short courses and personal projects, I learnt full-stack development, UX and UI Design and while this provided me with the basic knowledge and skills I needed, I was struggling to remain confident.

I was in a continual cycle of self-doubt, a burst of accomplishment and confidence, before being knocked down by a new problem or difficult topic, then picking myself up again. I was sorely missing the connection with like-minded people, who were at the same point in their journey and understood the difficulties I was facing. This is where GPN became a crucial line of support for me.

In December 2022, Alex Penna and I were discussing my progress and she suggested that I should come and tutor at GPN Sydney. She explained to me how it provided an opportunity for girls and gender minorities to learn about coding in a fun environment, form friendships with others their age and be taught by women who are passionate about this field. I was uncertain at first. While I had taught children for several years, I didn't know Python and I was a beginner myself. I wondered, what could I possibly provide these students? However, with Alex's encouragement, I decided I would join the next workshop. I began with a lecture on introduction to coding. By the end of the following year, I had taken on organisational responsibilities, become a lead tutor in the beginner's room, and began building an application to create the bingo card for our icebreaker activity.

These experiences have improved my ability to explain basic coding fundamentals and concepts. Furthermore, it has provided me with passionate role models who regarded me as their equal, despite my inexperience, who knew the difficulties of entering a male dominated field and overcoming the pressure of imposter syndrome. These were women who urged me on, championed me and celebrated my accomplishments, particularly when I was successful in receiving a well-regarded internship with _Nology, which I believe GPN helped me prepare for. They valued the knowledge and strengths I had from my previous experiences and my unique perspective and understanding as a beginner in this field. They demonstrated this by listening to my ideas, implementing them and helping cultivate the skills I wanted to improve in.

My time at GPN has been a rewarding experience that has intertwined my love for teaching and coding, while providing a clear positive impact on the participants. It is a true joy to be able to give back to my community by working alongside an organisation and other tutors who reflect my passion of empowering women and gender diverse people and serve to build their confidence and knowledge in tech. In this upcoming year, It's my hope to increase my support of GPN behind the scenes, assist with additional nodes across Australia and help run our Junior GPN workshops.
I hope I get to see you there!

- Sara Moad

GPN Journeys
Isabella Hogan

My name is Isabella Hogan and I have been going to GPN for around 7 years now. I started going as a student in year 5 because my mum had started going as a tutor. I have now attended once so far as a tutor. I had started to learn a little about coding, and I thought GPN would be a fun way to learn more. At that point, I didn't know the community would be so friendly and amazing that it would be actually life-changing. From my very first GPN, I was placed in the advanced stream because of what I already knew. This was amazing as it allowed me to be challenged and get better while working alongside other girls who had a similar level of coding knowledge to me. It also allowed me to make social connections that would last me even into adult life. These connections mean that I can go to other extracurricular activities whether coding-based or not and recognise girls that I've seen in GPN. My network of friends has expanded to make me feel less isolated in everyday life.

As the years of my participation went by, I decided to try and challenge myself further by sitting in streams below my own to force myself to rely on my own knowledge and work through the advanced content independently. This also allowed me to practice my social skills as I would try to help those around me and aim to better the experience for all the other students by interacting with them and including everyone as much as I could. After a couple of terms of me doing this, the tutors started to notice and proposed the idea of a student ambassador position. A person in this position would work as a helper for the tutors and would try to help students around them to lower the work for the tutors. Another job of the student ambassador was to make friends with the other students and ensure that they were having a good time. They also participated in tutor discussions on how each GPN session went and to volunteer ideas to improve it from another perspective. I was the first student to be assigned the role of student ambassador for my last two GPNs before I graduated High School in term 3 of 2023.

At GPN I have completed many projects, such as; a chatbot, a rock paper scissors game, a naughts and crosses game, a physical bop-it game and many more. These projects were always very inspiring and the solutions we were taught were aimed at our stream's coding level. This was an amazing system to stretch us by teaching us new coding methods while still completing the same project as other streams leaving everyone feeling accomplished.

My favourite project so far has been creating a naughts and crosses game. It inspired me so much that I went home and used it as a basis for another project where I created a machine learning naughts and crosses bot. Through this project, I learned a lot and I even got accepted to present it at a coding conference to show what I had learned. This was an amazing experience that will positively affect my future job search. And all of this was because of GPN. That was the first of two times that I have presented my coding projects at this conference.

By far the most impactful lesson I learnt at GPN was not anything about coding but instead, it was the ability to interact with people and to help them in a way that is empowering rather than patronising. This helps me immensely in my current job as a coach for a primary school robotics team. It allows me to guide the students towards solutions, and to reach the answers themselves instead of just telling them, better promoting their learning.

As I have just graduated high school I recently had to apply for uni and work out what I wanted to do and where. I found this difficult but with support from the amazing people at GPN I explored a lot of the different options and heard the stories and opinions of a lot of people in different stages of schooling and work to help guide my decisions. The different ages of the tutors also meant that a bunch of them had recently gone through the HSC and were able to give invaluable advice on how to manage a reasonable study schedule. Their insight helped me to do well on the HSC and choose, apply for, and get accepted into my uni and course of choice.

I think overall I credit who I am today to the amazing people at GPN both students and tutors. It has always been a day that I've looked forward to. A way to learn coding in a more friendly environment than school and a way to reach out and make connections within the community of girls in STEM. The experience I've gained will always help me within the coding field and I will always have the memories and friends I've gained. I believe that going to GPN is something that will benefit any girl who is interested in STEM whether they have coded before or not. I will forever be grateful for the community GPN creates for making it easier to get into a male-dominated field like tech.

- Isabella Hogan

Awards and Achievements

Most Innovative Educator in Cyber 🔗
Australian Women in Security Awards

Renee Noble (CEO) and Bella Lafrenais (GPN Melbourne Lead)

GPN and Tech Inclusion won this category, in recognition of our work teaching students that cybersecurity is both far reaching, highly impactful and has deep technical challenges, - and inspiring students to get involved!

Champion of Change 🔗
Women in Digital Awards

Renee Noble (CEO)

Renee was awarded this prestigious Champion of Change award in recognition of just that: having an outsized, lasting, and national-reaching positive impact on the advancement of women in technology.

What's Her Journey Article 🔗
Women In Security Magazine

Alex Penna (COO) Women In Security Article

Alex was featured as an industry champion in the Women in Security Magazine. Her article reflects on her successful career and impactful work, and shares advice for others in the tech industry.

Women: why tech suits your abilities 🔗
Education Today

Renee Noble (CEO) Education Today Article

Renee was showcased in this article discussing the broad range of modern skills required to be successful in tech and how women bring a unique perspective to tech and team dynamics.
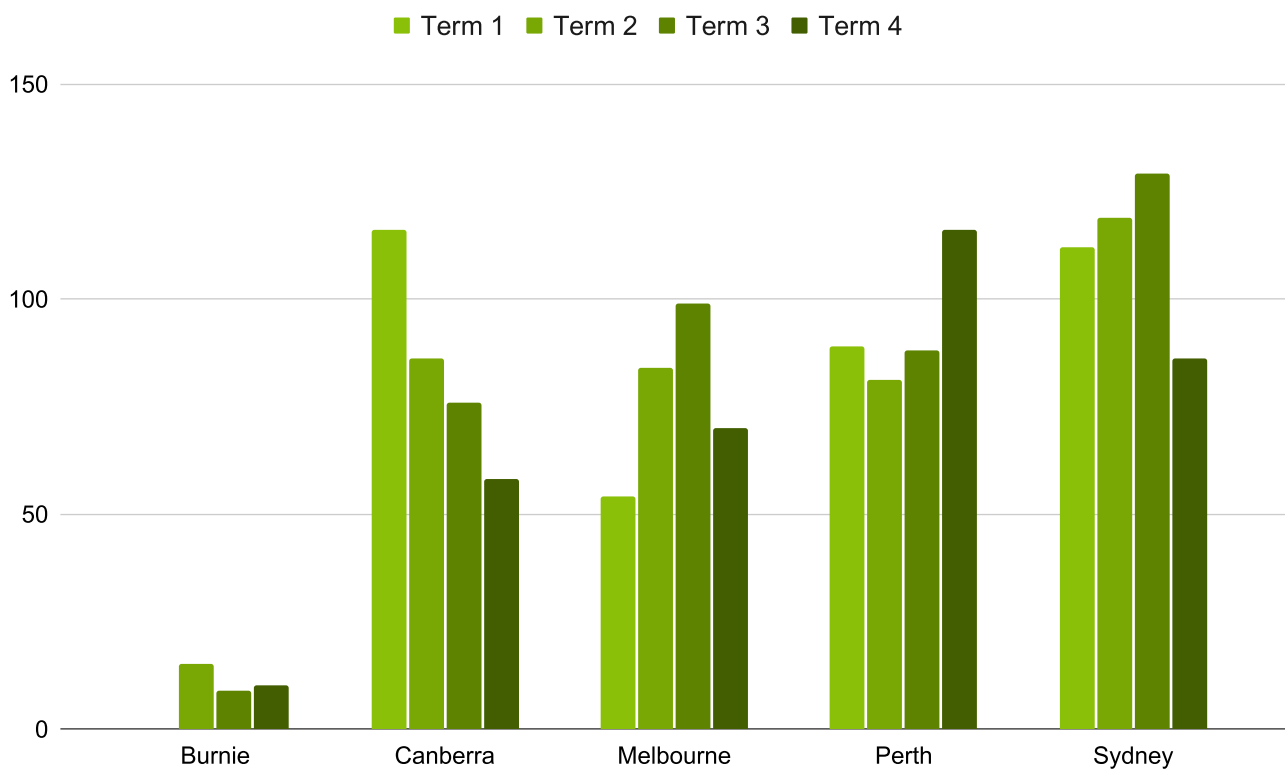
Burnie GPN Spotlight 🔗
The Advocate

Students at Burnie GPN

The Advocate ran a spotlight on the fantastic work of GPN in Burnie, complete with video, article, and celebration of this impactful tech community growing regional Tasmania!

GPN 2023 in Data
## Student Impact

Number of students at each event

In 2023, we reached a mammoth 1500 students across five locations around Australia, with Perth and Melbourne reaching their all time highs this year.

Across our nodes in capital cities, attendance has been strong, with some fluctuation expected. The Canberra node seems to buck the trend here, and we will follow up to offer additional support and resources, to the current team taking on the role of delivering GPN workshops in Canberra.

Our small Burnie node may look like rookie numbers, but the workshops are immensely impactful, especially in the context of the derth of extracurricular opportunities in the area and small local population. Here's to more regional and rural opportunities in the future!

Do you want to study IT at Uni?
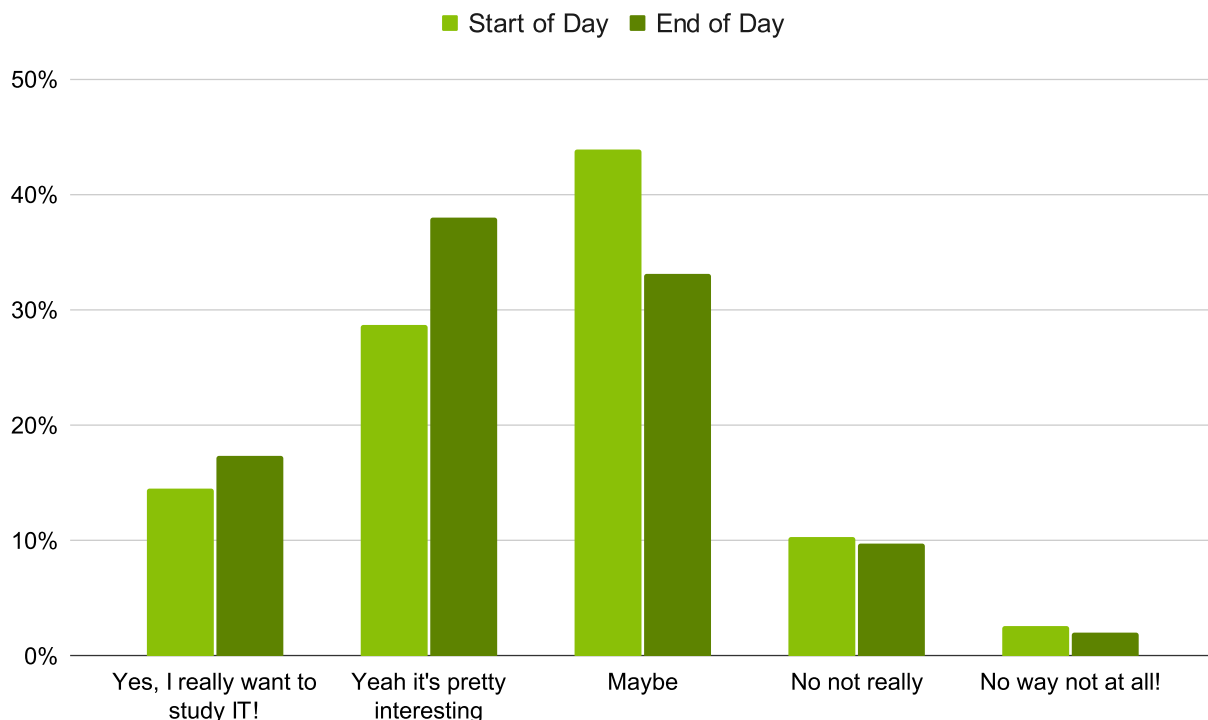
We have two surveys that we give the students at our event, one at the very start of the day and one at the end of the day. We ask them this same question in both surveys and here we can see the result of comparing the percentage of students that selected each answer.

We can see a big increase in the number of students interested in studying IT and a smaller increase in the number of students excited to study IT. (Keeping in mind, these are students who have already self-selected to attend a computing workshop, any increase here is fantastic!) Similarly, there is a significant drop in the number of students at the end of the day who are unsure about studying IT at university compared to the beginning of the day, and we can see a small decrease in the number of students who are uninterested in studying IT at uni.

From this data, we can conclude that by the end of the event, we have positively impacted how our students think about studying IT at university.

This increase in interest and excitement is likely due to our content and format staying engaging and interesting throughout the day. We showcase a range of career paths within the IT industry, highlighting the diverse opportunities available to students. Additionally, we have current university students and professionals in the field speak to the students, giving them valuable insights and advice.

Overall, this highlights both the necessity and impact of our program.

Compared to this morning,
how much do you want to study IT?

96%
of students

want to study IT:
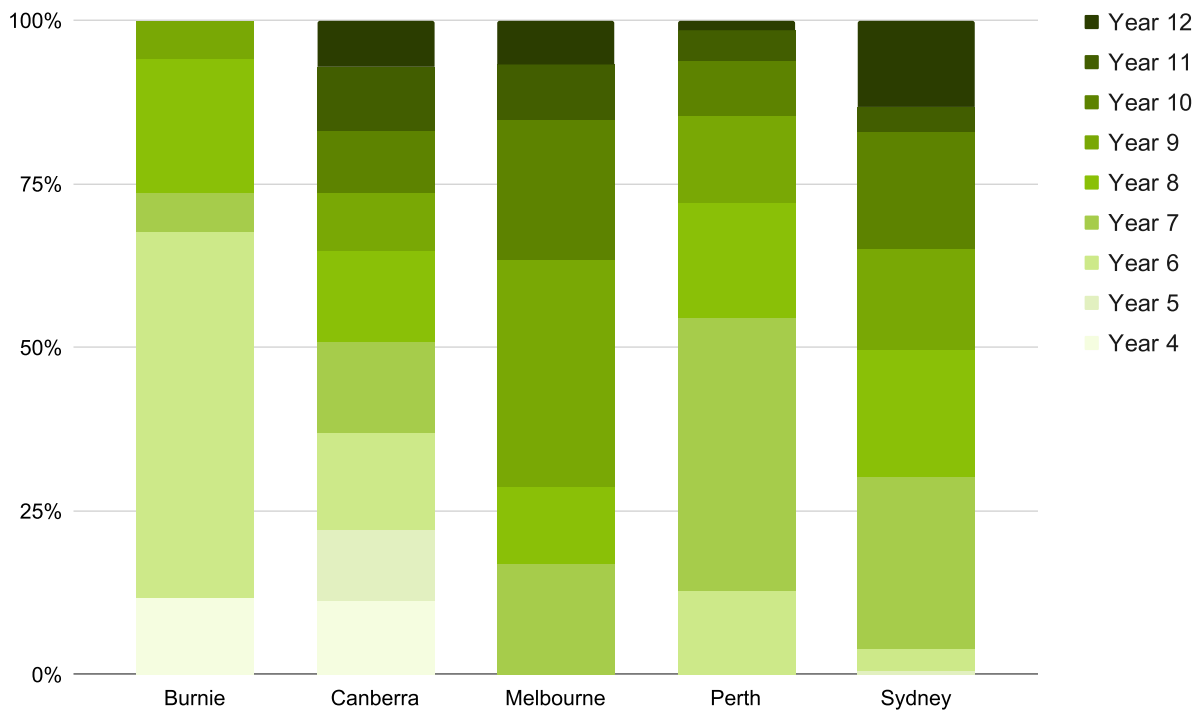about the same*
more, or
way more

than at the beginning of the day

* A lot of our students were already convinced at the beginning of the day, including from having attended previous workshops!

GPN 2023 in Data
Student Demographics

### Student year levels at different locations

Here, we can see the breakdown of the percentage of students at each node in which year level at school.

All the nodes have a healthy mix of students through the years, ensuring that students have a variety of role models starting with peers, and progressing through senior students, and tutors, including university students and industry professionals.

Canberra is transitioning from allowing primary school students to attend their workshops, so we can still see those youngest years represented here. We have found that these students tend to have a worse time than High School students with our content, especially in nodes with a smaller tutor-to-student ratio. To better serve these students, we are introducing a pilot GPN Junior program in Sydney.

Previous GPN experience
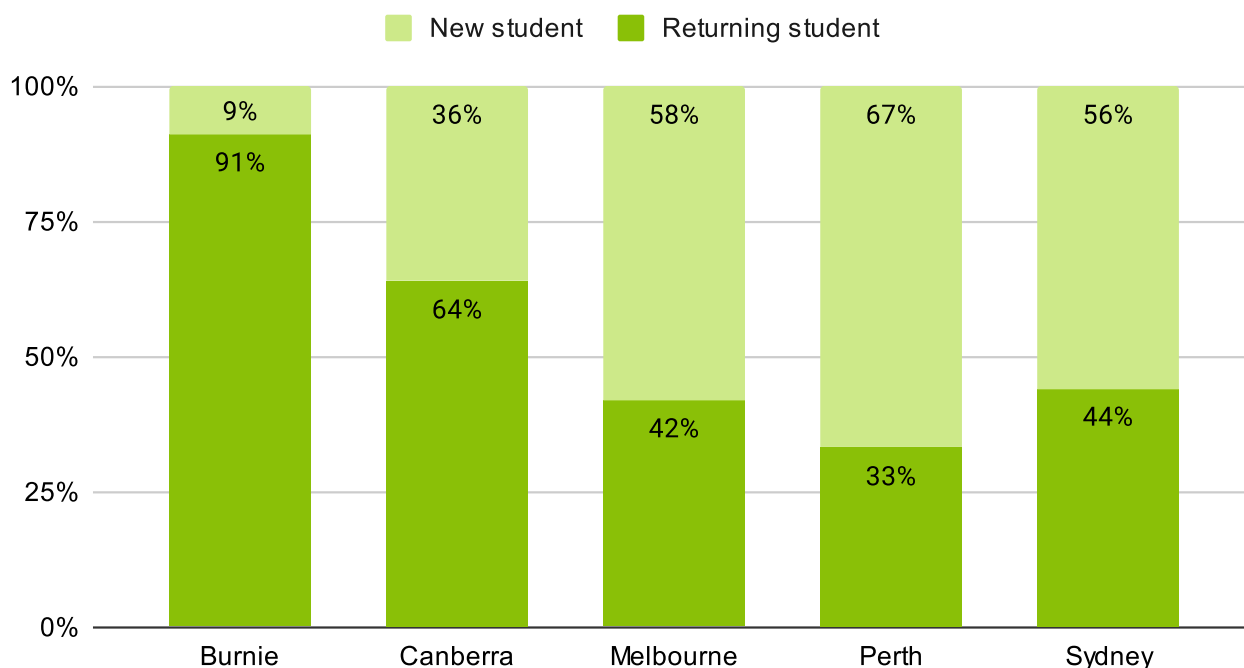
This graph shows the percentage of new versus returning students at each of our locations across 2023.

We can see that each node has a good mix of returning and new students.

Burnie has the largest percentage of returning students, as they are a regional node with a small but strong cohort. On the opposite end of the spectrum, we can see that Perth has far more new students than we have previously seen, which we expect is due to moving to a new location in Term 2 of 2023. We anticipate that as they establish themselves in the new space and build relationships with local schools and organisations, we will see a more even distribution of new and returning students.

Sydney, Melbourne and Canberra especially have a healthy mix of new and returning students across their events, showing a good balance between growing the community with new students, ensuring they feel included and welcomed regardless of their previous experience, and ensuring that the existing students continue to see value in returning to GPN.

GPN 2023 in Data
Tutor Demographics

Tutor institution percentages
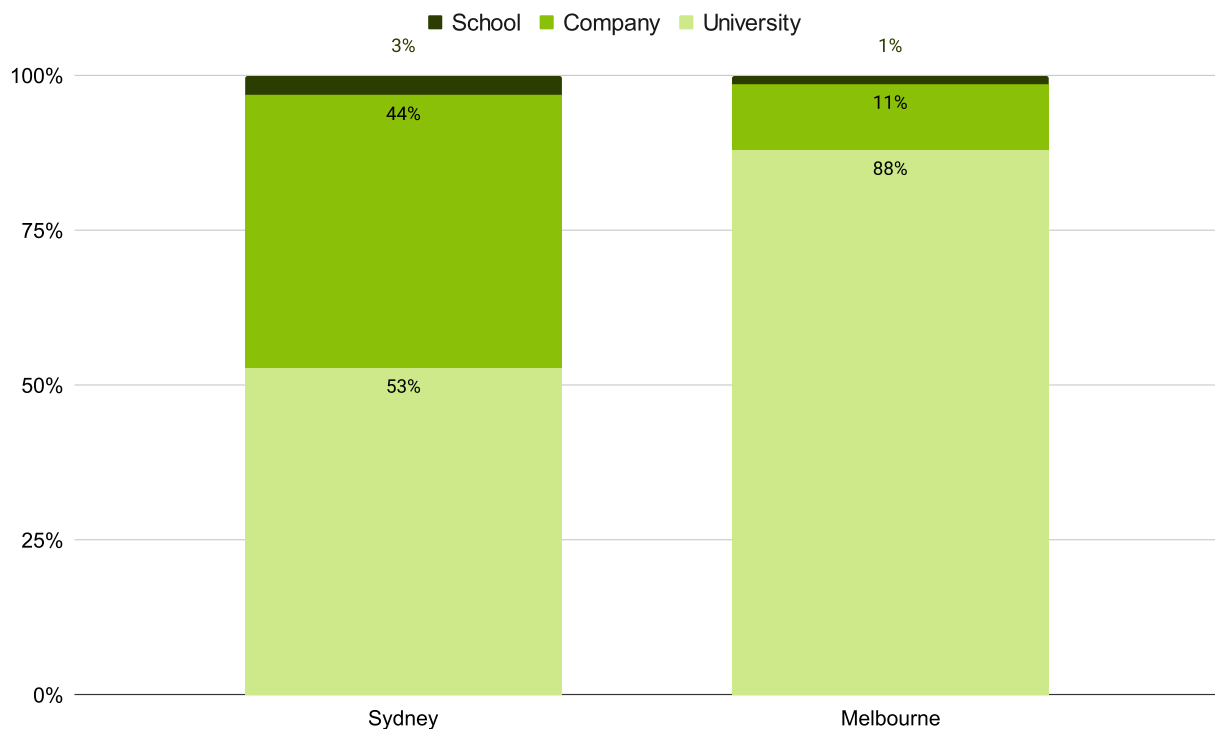
We currently only collect this data for tutors in Sydney and Melbourne.

This graph shows that most of our volunteers are university students and that our engagement with young professionals tutoring at our events is much stronger in Sydney than in Melbourne, perhaps reflecting the local community building that has happened over the last 15 years of GPN Sydney.

In Melbourne, there are 11 unique institutions that our tutors have identified. The University of Melbourne is by far the most represented, with 80% of the volunteers. Atlassian is next with 5%, then Xero with 3%. This is likely due to becoming a Melbourne Plus eligible activity, allowing UniMelb students to get credentials after volunteering.

There is a much wider range of institutions (36) that our tutors belong to in Sydney, likely because GPN has been running in Sydney for much longer with a more mature volunteer team. Their top 5 are UTS (19%), UNSW(19%), Atlassian (17%), USYD (10%) and Microsoft (3%)

2024: What's next ?

Grow

Our key targets for growing the existing program in 2024:

- Start a node in **Adelaide** and **Brisbane**
- Continue to grow workshop sizes in Sydney, Canberra, Perth and Melbourne
- Grow tutor team in Canberra and Burnie to better support more students

Expand

Our key target for expanding the program in 2024:

Starting a Pilot program for GPN Junior in Sydney

- A program designed for Primary school students between Year 3 and Year 6
- Allowing late High School students to volunteer as tutors
- Introducing a new format to our events, running for a half-day once a term
- If successful, we will continue to grow the program in Sydney and introduce it in other locations

Girls' Programming Network
Junior

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ECU EDITH COWAN UNIVERSITY AUSTRALIA

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We couldn't do it without you!