The Atlas

An Entirely Student-Driven Guide to the
Program in Neural Computation (PNC) and
Program in Systems Neuroscience (PSN) of
the Neuroscience Institute at Carnegie Mellon
University

To you, the reader.

Science does not exist without Graduate Students.

Contents

Di	isclaimer	vii
Pı	reface	viii
C	ontributors	ix
Ι	Prospective Students	1
1	Organizational Structure Tomas Suarez Omedas	3
	 Neuroscience Institute - CMU The Dietrich College - CMU Center for the Neural Basis of Cognition - CMU & Pitt Center for Neuroscience University of Pittsburgh - Pitt 	3 3 4 4
2	Why CMU and Pittsburgh? Tomas Suarez Omedas	5
	2.1 Program funding/support 2.2 A unique place for science 2.3 About Pittsburgh (general) 2.4 Cost of living	5 5 6
3	Arriving and Moving to Pittsburgh Tomas Suarez Omedas 3.1 Arriving to Pittsburgh 3.1.1 Driving 3.1.2 Flying 3.2 Living in Pittsburgh 3.3 Do I need a car?	7 7 7 7 8 8
П	I Incoming Students	9
4	Transitioning to Graduate School Tomas Suarez Omedas 4.1 How to be an expert in your field	11 11 12

vi	Con	ite
5	Insurance and Taxes	
	Tomas Suarez Omedas	
	5.1 Insurance	
	5.2 Taxes	
6	Apartments and Renting	
	Tomas Suarez Omedas and Tim Nolan	
	6.1 Orienting yourself in Pittsburgh	
	6.2 Where to live?	
	6.3 Renting	
	6.3.1 How much should I budget?	
	6.3.2 How do I find a place?	
	6.3.3 Roommates?	
	6.3.4 Pittsburgh slumlords	
7	Classes and Program Requirements	
	Tomas Suarez Omedas	
	7.1 First Year Classes	
	7.2 CNBC Requirements	
	7.3 Electives	
8	Research and Professors	
	Tomas Suarez Omedas	
	8.1 Faculty by Research Area	
9	How to Ride a Bus like a Pro	
	Tomas Suarez Omedas	
	9.1 Bus Tracking Apps	
	9.2 Getting in the bus	
	9.3 Once inside the bus	

Disclaimer

As implied in the title, the contents of this guide are written for graduate students of the PNC and PSN by graduate students of the PNC and PSN.

The contents of this guide **do not** represent any formal or official position(s) held by the Neuroscience Institute, Dietrich College of Humanities and Social Sciences, the Center for the Neural Basis of Cognition, the faculty and staff who represent these institutions, nor Carnegie Mellon University as a whole. As such, any questions, comments, or concerns about its content should be directed to the current maintainers of *The Atlas*, whose information can be found here (link)

Preface

Graduate school is a *Choose Your Own Adventure* of high highs, low lows, and many million emotions in between. We (NISO at-large) feel that the CMU NI, with its deep roots in iconic fields of research spanning countless relevant fields to cognitive science and computational neurosciences – namely in computer science and computational thinking – is a uniquely attractive institution to train in Computationally-driven hypotheses and methodologies. Our sister school and co-founder of the Center for the Neural Basis of Cognition (CNBC) The University of Pittsburgh is a Tier 1 Research Institution, and its hospital system, The University of Pittsburgh Medical Center (UPMC), unite to make Pittsburgh and these programs in particular especially attractive. It's a good place to follow your greatest adventures!

Staff and administrators, bless them, serve a fundamentally different role within the Neuroscience Institute (NI). With it being early days of the new Institute's foundation, we want to develop a strong student culture from the offset. A common request from students of the PNC and new PSN programs is some form of support – whether it be FAQ, how to move to Pittsburgh, etc., all compiled in one place. That's where *The Atlas* comes in!

Its origins can really be traced back to PNC/ML's Arish Alreja, a former colleague and large inspiration for the birth of this idea (originally as a Plan of Study to navigate the PNC/ML track specifically). I owe him a crumpet! Thanks, Arish.

For some, Graduate School is a cakewalk. For others (like me!), it's a struggle for a while until you find the right recipe, so to speak. I wish this guide existed for me, basically.

Longer version in the official 1.0 release for May 2022!)

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Joint Program in Neural Computation and Machine Learning

Part I Prospective Students

1

Organizational Structure

Tomas Suarez Omedas

VP of Student Life

CONTENTS

1.1	Neuroscience Institute - CMU	;
1.2	The Dietrich College - CMU	
1.3	Center for the Neural Basis of Cognition - CMU & Pitt	4
1.4	Center for Neuroscience University of Pittsburgh - Pitt	4

In the marvelous CMU-verse, there are many organizational bodies that coexist and interact with one another. We will discuss some names and acronyms that you might have encountered or will encounter in this conglomerate: CNBC, NI, CNUP, Dietrich College.

1.1 Neuroscience Institute - CMU

The Neuroscience Institute (NI) is the main organization that the students of the PNC and PSN belong to. As of the moment of this writing, the NI does not have undergraduate program(s), so it is comprised of the graduate students in the PSN and PNC, plus the professors of several departments with neuroscience-related research. The NI students are organized by the Neuroscience Institute Student Organization (NISO) which is an organization made by and for CMU neuroscience students.

1.2 The Dietrich College - CMU

For reasons that escape our understanding, the NI belongs to the Dietrich College of Humanities and Social Sciences, **not** to Mellon College of Science.

Other departments/institutes in Dietrich College are History, English, Philosophy, Economics and more. Maybe you would think that we should always be surrounded by scientists and that this is a waste of time, but actually Dietrich people are very nice and make fun events. Not all in life is science.

1.3 Center for the Neural Basis of Cognition - CMU & Pitt

Probably the most complicated structure of all, the Center for Neural Basis of Cognition (CNBC) is a cross-institution hub that serves as platform for all neuroscience researchers to share data and progress, talk, collaborate and keep one of the largest neuroscience communities in the nation. To join the CNBC, the students of most programs need to take four specific classes and then they get their CNBC certificate. In the case of NI students, we form part of the CNBC automatically just by being part of the NI (we still have to pass the courses). All members of CNBC get \$1,000 to buy a new computer and some years the NI gives first year students an additional \$750 to improve the power of that computer. Because of the CNBC's collaborative qualities, NI students have access to all of the neuroscience related labs at CMU plus all Pitt labs that are part of the CNBC and access to any Pitt class relevant to student's interests and research. Being part of a lab at Pitt (even if it is your primary research lab) does not change your status as a NI and CMU student in any matter like program requirements, facility access, etc.

1.4 Center for Neuroscience University of Pittsburgh - Pitt

The analog of the Neuroscience Institute at Pitt is the Center for Neuroscience University of Pittsburgh (CNUP). They have access to the same labs and research resources that NI students do. The two main differences of NI to CNUP are that NI programs have a stronger computational-oriented perspective and that CNUP has many more classes to take through the whole program compared to NI. In any case, they are a nice bunch and good people to get beers with.

Why CMU and Pittsburgh?

Tomas Suarez Omedas

Emperor of Student Life

CONTENTS

2.1	Program funding/support	5
2.2	A unique place for science	5
2.3	About Pittsburgh (general)	6
2.4	Cost of living	6

Our first impulse to answer that question was "Why not?" but then we figured that it would probably be a good thing to have actual answers here, so here we go.

2.1 Program funding/support

Ph.D students in the NI have an stipend of 33K a year at the time of this writing. In total honesty, we will not talk here of how much we are truly due but 33K is in the high end of the Ph.D stipend spectrum. If you want to talk about how much we are due find a beer and contact the authors of this Atlas to get a nice afternoon of ranting. See section 2.4 to see why the cost of living makes this stipend be more efficient.

2.2 A unique place for science

For the non-lazy readers that went over Chapter 1, you know that there are many, *many* organizations in different levels. The actual purpose of that many acronyms is to bring many people (and its a lot of people) into what is sometimes called a *neuroscience hotbed*. It is ridiculous the amount of labs, ques-

tions, seminars and journal clubs available to every single CMU NI student. Adding the hotbed ingredient with a glorious easiness of collaboration plus knowing that the labs around here have a lot of money for top-notch equipment, we can say that the science at the NI is unique and fantastic.

2.3 About Pittsburgh (general)

In the unilateral vision of the author of this section, Pittsburgh is a *sweet spot* in terms of most things that you can measure a place to live with. It the sweet spot between a big city and a town, not too big to be overwhelming and expensive but not to small to feel like there is barely anything to do. It is the sweet spot between a college town and a city without big schools, the student population is large but at the same time there is a lot of non-student-related activities and people in the city. It is a sweet spot in traffic and mobility, moving with a car is easy and not prohibitive by traffic but at the same time it is very easy to move around by public transport, walking and biking. It is a sweet spot... alright you probably get the point. To summarize in one sentence: Pittsburgh is a city that is big and diverse enough for you to never be bored, but not too big and frantic for you to be distracted/overwhelmed. For a more detailed picture of how is life in the city, check section 3.2 Living in Pittsburgh

2.4 Cost of living

Living in Steel City is an exciting, cool and affordable experience. A quick survey of CMU peers tells us that we live with our 30K stipends comfortably. Most of us can pay rent, groceries, entertainment and dinning with that income alone, which truly cannot be said for many urban-based institution in the US. Rent is much, much cheaper than rent in bigger cities. One bedrooms and studios in the student-dense areas usually range in the \$900-1300, and if you don't mind sharing with roommates then the rents come around \$700-1200 a month. You don't believe us? Then check out Apartments.com and look for apartments in Shadyside, Squirrel Hill and North Oakland.

Besides rent, Pittsburgh is an amazing place in terms of cost of living and purchasing power adjusted to cost of living. On Numbeo Database you can see that Pittsburgh's index for rent is very low and the purchasing power index is very high.

Arriving and Moving to Pittsburgh

Tomas Suarez Omedas

Your friendly Student Life neighbor

CONTENTS

3.1	Arriving to Pittsburgh	7
	3.1.1 Driving	
	3.1.2 Flying	
3.2	Living in Pittsburgh	
3.3	Do I need a car?	8

Welcome to the amazing metropolis of Pittsburgh. If you have questions of how to get here from air or land, questions of how to move here or 8 minutes to kill, we recommend you to read this chapter.

3.1 Arriving to Pittsburgh

"nobreak

3.1.1 Driving

Just put the address on Google Maps, not that complicated. Also, most Pittsburgh streets are both-ways single lanes. That gives rise to the famous Pittsburgh left. Read that link if you plan to drive in Pittsburgh.

3.1.2 Flying

Coming from Pittsburgh International Airport is a very easy and painless form of travel. Once you arrive at PIT, you can choose to get to the city by Uber/Lyft or by bus. If you want to use the bus go to the lower level (where the baggage carousels are) and look for a sign that says door 6 (the sign is outside on the opposite side of the 7-Eleven) and wait for the bus. Use the Transit

app to track the 28X bus, and each ride costs \$2.75 in cash. Recommendation: Get a snack from 7-Eleven while waiting. If you are taking Uber/Lyft go to the same door and get message the driver that you'll be on the lower level. They might say that the upper level is best for them, so make sure you the driver knows where you are.

3.2 Living in Pittsburgh

You'll find (or have already found) that Pittsburgh is a very walk-able and well connected small city. The city is organized by having one street (also called strip) in most areas-towns, each having their own personality and combination of dining places, bars, clubs and more. There is always a new place to look and some unique specialty you haven't tried yet, which makes the life outside of campus very interesting and local-oriented at the same time. Most restaurants in the city are small locally-owned businesses which contributes to the personality and charisma of the city itself. It is a city that always has something to do in terms of outdoor activities, concerts, dining, entertainment and more while not having monumental traffic jams and non-stop big-city frenetic activity.

3.3 Do I need a car?

Quick answer, no. Pittsburgh's public transport works very well, and specially with a student ID that makes every single ride in Allegheny County's public transportation system free of cost. Besides the public transport, most student-dense areas are very walk-able, with grocery stores, gyms and restaurants. Even if you don't need a car, having one for sure is a benefit in terms of moving, getting groceries and doing trips to Costco, IKEA and Walmart. However, these locations are not out of your reach as the service Zipcar is strong in Pittsburgh and you can rent cars for only a few hours up to whole days. Alternatively you might have some leftover pizza that you can exchange for a few hours with your friend's car (amount of slices is negotiable).

Part II Incoming Students

4

Transitioning to Graduate School

Tomas Suarez Omedas

CEO of Student Life

CONTENTS

4.1	How to be an expert in your field	1.
4.2	How to be a functioning adult (if you don't know how)	1

If no one has said this until now, Congratulations! You deserve that and an ice cream cone because you have been accepted as a doctoral student in a world-class university. Now to the important stuff, we know that the concept itself of being a graduate student can be overwhelming but we can assure you that everything will be alright.

From this point on society expects two things from you: To be an expert in your field *and* to be a fully functioning adult, but we got you.

4.1 How to be an expert in your field

Step 1: First you have to... Just kidding. There is no set of steps that will take you from where you are to being an expert. Everyone begins as the new guy at some point. You will feel that you are the person that knows less in the room (in many rooms) and that may discourage you or make you feel small. Push through that feeling and focus on yourself and how can you improve, even if you feel small. The main way to acquire the "expert" qualities that scientists have in the humble opinion of this author is to read a lot (scientific papers and books) and speak up. If you don't understand what is happen ask for a rundown. If you are confused ask for clarification. Look for the knowledge you need, in literature and in the people around you.

4.2 How to be a functioning adult (if you don't know how)

We are still figuring out this one, but if you have any input please let the authors know and we might write it up here. The main part that we identify of being a functioning adult is to take care of oneself. Take care of you physically, mentally, financially and so on. In the CMU community, personal well-being and mental health is valued, understood and cherished.

In more specific matters, I (the all-knowing author) have four categories of things to do, and the balance between them is what keeps me going day by day. First (and most obvious), academia: Turn stuff on time, achieve milestones and learn lots from everything around me. Second, personal "logistic" stuff: Do my taxes on time, go to the doctor/dentist/optometrist often (not only on emergencies), organize my room and kitchen and so on. Third, contact with my family and friends: I maintain contact with the people I love and cherish, which involves calling/messaging them and finding time to connect with them (traveling or talking about different things than school). Last but not least, my fourth category is me: I do stuff I like and live a life that I like living. I believe that there is no way that I can push through a Ph.D without liking myself in the process.

You can make your own categories (or have none whatsoever), this is the way that this humble author found to become a resemblance of a functioning adult.

Insurance and Taxes

Tomas Suarez Omedas

Lord of Student Life

CONTENTS

5.1	Insurance	13
5.2	Taxes	13

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5.1 Insurance

At the moment of this writing CMU announced that will cover 100% of the health insurance of graduate students. CMU's graduate student association (GSA) will use this win for graduate students to advertise their effectiveness to sort bureaucratic resistance (and it is well deserved).

To this moment the insurance plan through the university is called the Student Health Insurance Plan (SHIP, yes, we like acronyms) and you can check their page for a complete list of services and coverage. In general, SHIP is a very good base insurance that covers regular physical exams, many emergency services and lots of other health services. It does not include dental and eye health insurance, but for under \$150 a year the plan can be expanded to cover dental and eye care. There are also ways to use that money to get another insurance (while CMU pays the same amount), but requires contacting the administration.

Pittsburgh is an amazing city for healthcare, with many hospitals and independent practices of dentistry, ophthalmology and more. One piece of advice, schedule physical exams and dentist appointments with anticipation as appointments may only be available many months in advance.

5.2 Taxes

Taxes here are just as complicated as taxes everywhere in the US, but there are a couple perks for CMU students. First, CMU students are exempt from local and state taxes if your address in the tax return is in Pennsylvania. We still pay federal taxes like social security and medicare, but reducing the other two tax sources makes our returns much cheaper. Important note for international students: CMU offers Glacier, a tax tool free only for CMU international students. This can help you be asured that you will not have tax problems with Uncle Sam down the road.

Apartments and Renting

Tomas Suarez Omedas

Senpai of Student Life

Tim Nolan

Tommy Suarez's weird sidekick

CONTENTS

6.1	Orient	ing yourself in Pittsburgh	15
6.2	Where	e to live?	16
6.3	Rentir	ıg	19
	6.3.1	How much should I budget?	19
	6.3.2	How do I find a place?	19
	6.3.3	Roommates?	19
	6.3.4	Pittsburgh slumlords	20

As stated before in The Atlas, Pittsburgh is on the friendly side of the spectrum with regards to renting (or buying) places to live. While perhaps not dirt cheap, the cost of living is quite manageable on a stipend when compared to coastal cities. Peak renting timing is late April and May for the best deals in town, but it is possible to find decent deals in June and July. Most lease contracts run August 1st-July 31st, but that can vary for different places.

You're more than welcome to ignore *all* of the advice in this chapter, spare one thing: In Pittsburgh (nor anywhere, for that matter!), **NEVER sign an** apartment lease sight unseen. Always, always, always book a tour – ideally in-person, but virtually works too – before locking into a year-long contract.

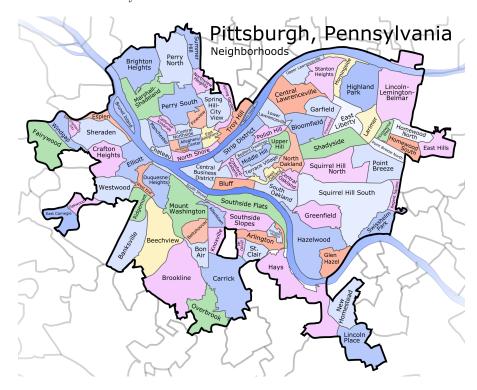
6.1 Orienting yourself in Pittsburgh

So you're moving to Pittsburgh, cool! Where should you live? Well, let's get you oriented a bit first. Pittsburgh is a city with 90 neighborhoods, each with their own pros, cons, character, and quirks. That said, perhaps only a dozen

or so neighborhoods make sense to live in with a daily commute to CMU/Pitt campus.

Pittsburgh sits at the confluence of two rivers: the Allegheny to the north, and the Monongahela (affectionately known as "the Dirty Mon") to the south. The two join to form the Ohio river, which, if you're a geography nerd and care, eventually flows into the Mississippi river and out of New Orleans, LA!

You will undoubtedly spend the majority of your time in Pittsburgh's East End – the neighborhoods east of downtown and sandwiched between the Allegheny and Mon rivers. CMU demarcates the western edge of Squirrel Hill, and Pitt is immediately to its west in Central Oakland.



6.2 Where to live?

By far, the two most popular areas for CMU graduate students to live are Shadyside and Squirrel Hill. These two areas are just to the east of CMU and Pitt, and are well-connected to the universities and downtown via various

buses and main streets. We will talk about rent pricing in the next section, but here are some qualitative facts from these two areas:

• Shadyside

- 10-20 min to campus via bus
- Slightly younger population
- Good amount of local bars and restaurants in the area
- Apartment buildings as well as multi-unit houses
- Upscale shopping on Walnut St, if that's your thing
- Has many grocery stores, a huge Giant Eagle, a smaller Aldi, a
 Japanese grocery, and at the far end of Shadyside there is a Target, a smaller Giant Eagle, and a Whole Foods
- Easy (read: flat) biking to campus, if that's your thing
- Buses to campus: 71A-D, 75, P3 (bussing from Shadyside requires a ∼5 min walk to CMU from Fifth + Morewood/Neville)
- CMU shuttle: CMU has shuttles that run regularly from many neighborhoods (including Shadyside) directly to campus. Download the RideSystems app or go online to track the buses in real time.

• Squirrel Hill

- 5-20 min to campus via bus
- Many families live in the area (more quiet area)
- Mostly multi-unit houses for rent
- Many restaurants and some shopping in Forbes and Murray avenue (but less than in Shadyside)
- Only has one grocery store, a very small Giant Eagle (yes, we find that funny as well) but that has all you need, although maybe not many different brands of everything
- Downhill biking to campus, uphill on the way home
- Buses to campus: 61A-D, 67 (all these lines drop off directly at CMU campus)
- CMU shuttle: also has a route through Squirrel Hill

If commute time to CMU is of utmost importance to you, Squirrel Hill is tough to beat (besides perhaps North Oakland, see below). Along Forbes Ave you will find a constant stream of 61 buses that come every three or four minutes. If you prefer a bit more density (but not overwhelmingly so), a flat commute for biking, or find yourself at Pitt several times per week, Shadyside gets the edge.

Though they are the most popular, don't exclusively limit yourself to Shadyside and Squirrel Hill during your apartment hunt! Here's a nonexhaustive list of other areas to consider, roughly ordered by commute time to CMU.

• North Oakland

- Is very close (read: walkable) to CMU and Pitt main campus, especially Mellon Institute where many neuroscience research labs and classes are located
- The undergraduate population is more dense
- Good restaurants and bars nearby
- Almost exclusively apartment buildings, with fewer multi-unit houses
- Its "prime" location makes it more pricey

• Central/South Oakland

- At the very foot of Pitt campus, short walk to CMU
- Very dense, almost exclusively consists of Pitt undergrads and the NISO president
- Affordability can't be beat

• South Side

- More urban than Shadyside and Squirrel Hill
- Center of Pittsburgh night life, make of that what you will
- Bus lines: 54, 75

• Bloomfield/Friendship

- More urban than Shadyside and Squirrel Hill
- Less connected to campus than Shadyside. Bus lines: 54, 71A, 71C

• East Liberty/Highland Park

- E. Lib is more urban than Shadyside and Squirrel Hill; Highland Park is very similar to Squirrel Hill
- Walking distance to Target and some good food and drinks
- Bus lines: 71A-C, 75

• Lawrenceville

- Trendiest neighborhood in town
- Bus lines: 54, 93

• Point Breeze/Regent Square

6.3 Renting 19

- Basically just Squirrel Hill continued, but further east.
- Less connected to campus. Bus lines: 67
- Regent Square is no longer a highly recommended option with the collapse of the Fern Hollow bridge, which ruined 61A and B service

Disclaimer: I want to reiterate that this list is *not exhaustive*, and omission of a neighborhood does not imply you should not live there. If you have questions about a neighborhood, feel free to email the authors.

6.3 Renting

The renting process can be stressful, with many pitfalls. For many, graduate school will be the first time you're not living at home or in on-campus housing. Here's what to expect and our tips for navigating the Pittsburgh rental market.

6.3.1 How much should I budget?

Most graduate students (at least at the beginning) rent single rooms in multiunit houses or apartment buildings, so let's begin there. For a *complete* shared living space (i.e., full room with closets, a bathroom [shared or single], and decent-sized kitchen space), single room rents range from \$600 to \$1200 plus utilities. These are estimations and we recommend to check Apartments.com and such for a more exact and current information. We know there are people who like to save by living in basements, closets and such (we respect you, you are valid) and those rents can be found for \$300-\$500, however we do not recommend them for your mental health.

One-bedrooms apartments can be found in the areas mentioned above at around \$850 to \$1,400. They have the advantage of more privacy at a little higher expense, but unlike bigger cities it is not impossible to rent onebedrooms.

Be mindful of what utilities you have to pay. Generally, it's some subset of Gas, Electric, Internet, Garbage, and Water, with the landlord taking the rest. Depending on your situation, budget approximately \$0 to \$200 for utilities.

6.3.2 How do I find a place?

There is no surefire answer to this question. For best success, the solution is to do a daily comb of Facebook Marketplace, CMU and Pitt FB housing groups, Apartments.com, Zillow.com, and Craigslist.com. When you see a listing you're interested in, reach out for a tour immediately, as there are literally tens of thousands of other students between CMU and Pitt looking for places, too!

6.3.3 Roommates?

Finding potential roommates can be done through the CMU roommate finder website. As there is no graduate campus housing, there are always a good amount of students with and without places to find roommates.

Depending on the landlord, there might be a principal lease where one of the roommates subleases each room to other people, but it is also common to have direct single bedroom leases to avoid complications with the primary lease holder.

6.3.4 Pittsburgh slumlords

Pittsburgh, like many cities, has good and bad landlords (well, "good" is a debatable term for anyone who profits off the fundamental human need for shelter, but I digress...). Avoid the following notorious names, or at bare minimum proceed with caution if you want to live in an apartment owned by one:

- Lobos Management
- Nexus
- E&J Management
- McKee Place
- Ross Sindler
- Kathryn Kukla / Tranquilily LLC
- Claridge Apartments

Classes and Program Requirements

Tomas Suarez Omedas

Knight of Student Life

CONTENTS

7.1	First Year Classes	21
7.2	CNBC Requirements	21
	Electives	22

The full list of courses for each program can be found online here (PSN) or here (PNC), but we'll go over class recommendations, remarks and more. Don't forget to ask other students about their experience with these courses.

7.1 First Year Classes

Both PSN and PNC programs have very similar class requirements, and thanks to the program founders we only have to take a few classes, allowing time for research. In a quick summary, we recommend to take first Advanced Cellular Neuroscience for everyone in their first year and either an elective or Cognitive Neuroscience to tackle CNBC core-course requirements. If you have an elective that are very excited to take and believe it will most likely benefit your current research trajectory, we encourage you to take it. If there aren't any electives that are in your scopes, the wisest option is to save them for when you identify the ones that are going to help you in your research.

7.2 CNBC Requirements

The CNBC required courses are four in total: Advanced Cellular Neuro, Systems Neuro, Cognitive Neuro and Statistical Models of the Brain. We recom-

mend to take them all within the first four semesters, either one or two each semester as these are key base neuroscience courses. The cornerstone of these classes is reading several primary literature publications. The main benefit from this classes is to make you into a neuroscientist in training regardless of your background and put you up to speed with past and current methdos and hot topics in the field.

7.3 Electives

The list of electives in PSN and PNC programs has some overlap and we are required to take two-three electives total. In the PSN there is a longer elective list and the PNC has a "stratified" list of electives with different groups of them. Use your best judgement and take the electives that will help you and your research, as you have now the chance of acquiring very direct knowledge from great professionals in the field. Don't hesitate to ask students of other cohorts and the authors of this Atlas to tell you their experience about their electives. If after you take your electives there are more classes you would like to attend, you can always audit/observe the class without taking it for a grade.

The requirements of both electives and additional courses for each of the programs are slightly different, so let's go over them one at a time

- PNC: Students in the PNC are required to take a total of three additional courses: one computational neuroscience methods and two quantitative methods. Each course can be chosen from a pool specified in the PNC curriculum page. IMPORTANT: the course 36-705 Intermediate Statistics is strongly discouraged for both PSN and PNC students. Is a course on the statistics that provides basis to machine learning methods but is not a class of machine learning itself with a very intense curriculum and high attrition rate.
- PSN: The PSN has one additional course 36-749 Experimental Design. This course is meant to catch up to speed students with little background in math and statistics used in experimental work and analysis. If you have background in these areas it might be a redundant class and talk with the program director or students from previous cohorts for more advise. PSN students also need to take two semesters of two different seminar series: the Bio department seminar series and the Bio student seminars, no exams done in these classes but attendance may be mandatory and taken every week. Finally, there is a Proposal Preparation course that no one in the PSN has taken yet as they are just beginning, but it'll be updated here as soon as the PSN students grow up.

8

Research and Professors

Tomas Suarez Omedas

Prince of Student Life

CONTENTS

Find a simple breakdown of research areas available to any student in the NI. Disclaimer: This is subjective and bound to change over time, let the authors know if there are relevant information that this list does not cover

8.1 Faculty by Research Area

Right to the point, simple list by areas. Professors might be listed more than once

Sensory Systems	Motor Systems	Computational	Disease	BCI	Other
Vision Raj Ghandi Carl Olson Matt Smith Mike Tarr	Basal Ganglia	Byron Yu	Parkinson's Jon Rubin Eric Yttri Aryn Gittis	Rob Gaunt	
Somatosensory Kate Hong Eric Yttri Alison Barth	Raj Ghandi Carl Olson Matt Smith Mike Tarr	Steve Chase Pulkit Grover Maysam Chamanzar William Stauffer Rob Kass	Schizophrenia Tobias Teichert Ross Williamson	Steve Chase Doug Weber Aaron Batista Bin He Takashi D.Y. Kozai	Andreas Pfenning John Paul Shen Rajkumar Kubendran Wayne Wu
Audition Ross Williamson Barb Shinn-Cunningham Caroline Runyan Michelle Insanally Tobias Teichert Aravind Parthasarathy	Sensorymotor Steve Chase Aaron Batista	Chengcheng Huang Jon Rubin Bard Ermentrout Mike Tarr	Stroke Doug Weber Kate Hong RNEL	Maysam Chamanzar Marco Capagrosso Jen Collinger Elvira Pirondini	Hartmut Geyer
Araving raithasarathy					

How to Ride a Bus like a Pro

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Guardsman of Student Life

CONTENTS

9.1	Bus Tracking Apps	26
9.2	Getting in the bus	27
9.3	Once inside the bus	27
9.4	Getting off the bus	28
9.5	And what about the subway?	29

Ok let's say the quiet part out loud: Not everyone knows how to ride a bus, and it is alright to not know before you come to Pittsburgh. If you need this guide to help you navigate the public transport system, you are valid and we will get you up to speed in no time. If you do not need it, please skip and go do something more important with your time (like congratulating the authors for being so nice and cool with feedback about the Atlas and pizza).

Quick disclaimer: The 28X bus that runs from Shadyside and Oakland to the airport. It usually runs once every hour (although more frequently at some hours of the day) and takes about one hour a one-way ride depending on traffic. Plan ahead, but it is cheaper than using an Uber/Lyft to the airport.

9.1 Bus Tracking Apps

Everyone has their favorites, but here are the most used apps. Feel free to contact the authors for any update/comment about the public transportation apps.

• Transit app. Mostly reliable, nice intuitive interface and works in most cities of the US. Easy to find best routes and alternate bus routes. This app is also favorable because you can purchase tickets within the app with a credit card rather than cash (Apple Pay and Google Pay available). Excellent for newcomers and family/friends who arrive at the city. All

tickets purchased through Transit have already a 3-hour transfer window, where the same ticket will work for any public transport ride during that time.

- PGH Regional Transit. Most accurate timing, minimalist app/website and specific to Allegheny County area.
- Google Maps. Least accurate bus timings (although still workable), app also has information about restaurants and locations.

9.2 Getting in the bus

Once you find a bus stop, make sure you are a 5-star citizen of the world and ride this bus correctly. Here is how:

- 1. If there is a line, go to the end (kinda obvious, but yes)
- 2. Raise your hand when the bus is approaching to signal the driver that you want to ride that bus. If no one at the stop signals, the bus will probably not stop
- 3. Place your CMU ID in front of the orange magnetic detector and make sure the ID is accepted. If you bought your ticket through Transit, there is a scanning machine right after the boarding door to the right where you can place the QR code from the ticket and the machine will do a very loud BEEP signaling that you are now a valid rider. SAY HELLO TO THE BUS DRIVER they work a lot and it is very easy to make their day a little better:) Remember, the CMU ID can only be used once per person on a bus. If you try to swipe in another person with it right after yourself, the ID will not work and you will have to embarrassingly pay in cash or get off the bus.

9.3 Once inside the bus

This is a crucial part and the one that most novices at public transport tend to get wrong, but don't worry - we got your back. The most important fact to remember: Everyone in the bus is trying to go somewhere (same as you) and they want to be as comfortable as possible (same as you), so it is OK to be physically close to other people, communicate with them and so on. We are all in this together.

- 1. Go to the back: It is much more efficient for the loading/unloading dynamics that the riders that are already in the bus are as far back as possible. If you find an empty row closer to the front it is alright to sit there, but do not stand in the bus if there are seats available. It is OK to sit besides someone else, it is supposed to work like this. If you are standing up, go to the back (yes, all the way to the platform in the back) instead of blocking the aisle for the other riders, crucial factor during rush hour.
- 2. Sit on the window if possible: When sitting in an empty row, go to the window seat instead of the aisle seat. The more people that fit seating down, the more comfortable we will all be and the faster will the loading/unloading be. This means that placing your bag on an empty seat besides you is COMPLETELY FORBIDDEN and if you do after reading this guide the author of this chapter will search you, find you and put you in a 5-minute timeout.
- 3. Priority seats: The first few seats are prioritized for individuals with disabilities or special needs. For most kinds of disabilities, the buses here will be able to accommodate you (this includes wheelchairs, walking aids and so). Be aware that if the bus is very crowded, the bus driver may ask you to wait for the next bus as there is no space in the current one (very rare occurrence, mostly seen during rush hour). Based on the local social contract, it is alright for able-bodied individuals to use the disabled seats during rush hour, but please don't use them if there is any other seat in the bus (including those that involve seating next to another rider).
- 4. Communicate when necessary: If you need to pass and someone is blocking the aisle, if you are not sure about the route you are taking or anything else, ask the people around you. People in Pittsburgh are usually nice and will help you with what you need. Similarly, help people around you that seem that need a hand.
- 5. Be aware: Your surroundings will constantly change and require you to interact with it, so make sure you are paying at least minimal attention to what's going on. The bus is a great time to listen to music, scroll social media or just disconnect, and that is valid. Make sure that if you are able-bodied and healthy, cede your seat to people that may need it more like pregnant individuals, elderly, etc. The authors want you to be safe and cared for, so make sure you know what's going on around you and don't slow the flow of people in and out of the bus.

9.4 Getting off the bus

- 1. Signal the stop: When you are close to the stop pull the yellow string that is hanging close to the window or press the red button that is in some of the metal beams by the aisle. If you cannot reach one or would have to step over someone to do so, kindly ask a fellow rider to signal a stop for you. Take into account that in the Pittsburgh area there are many stops close to one another, so make sure you signal at the right time to take the most advantage of the bus ride.
- 2. Leave the bus peacefully: The bus is required to stop until all riders have loaded/unloaded successfully. This means that you will have more than enough time to approach the exit after the bus reaches a stop. If you are in a window seat and have someone sitting next to you by the aisle, kindly ask them for pass after the bus has stopped. Why? This is to avoid people tripping and bumping into each other, just be patient and 30 seconds to leave is more than enough to navigate to the exit of the bus. Alternatively, if you are in an aisle seat and your fellow rider in the window seat wants to stand up before the bus reaches the stop, kindly communicate that you'll free the way when the bus stops.
- 3. Backdoor: Sometimes the bus driver will forget to open the back door of the bus, so if you are trying to unload the bus then you should shout "Backdoor" loud enough for the bus driver to hear you. It is expected for you to do that, and it is not disrespectful at all, so don't hold back. In some specific stops, the backdoor will not be available to use because there is something blocking it (for example, there is a rail by the backdoor at Fifth Ave and Tennyson in the east direction). In that case make sure you walk to the front of the bus and use that door.

9.5 And what about the subway?

Legends say that there is a subway in Pittsburgh, and they are true. There is a subway with a few stops by downtown (sometimes useful to go to the Steelers and Pirates stadiums). Same rules and recommendations as in bus riding apply for the subway. Happy riding!