

# Rising Stars

May 01, 2009

In case there was any doubt, the future of psychological science is in good hands. We present another installment of “Rising Stars,” the series profiling exemplars of today’s young psychological researchers. Here we profile international scholars who, although they may not be advanced in years, have already made great advancements in science.



Mohinish Shukla

## **Mohinish Shukla**

Rochester University, USA

Postdoctoral Fellow

<http://mohinish.s.googlepages.com>

### **What does your research focus on?**

I am interested in reverse-engineering the human mind. In particular, I would very much like to understand what the human infant brings along as part of its biological endowment that takes it from a little crying bundle to complex adulthood. What are the tools that the infant deploys in making sense of the world? I find language acquisition a particularly fascinating problem. Understanding how language is acquired can also help us understand how adult language competence might be structured.

### **What drew you to this line of research? Why is it exciting to you?**

My academic background is in biology. During my Masters, I was very interested in molecular genetics, animal behavior, ecology and evolution. Soon thereafter, I got a chance to study neuroscience from a physiological and systems perspective. I see my current line of research as a natural culmination of an interest starting from simple, unicellular organisms and increasing in biological complexity. Studying the mind is intellectually incredibly satisfying from my perspective — it represents the apex that required millions of years and depends upon the complex interactions at all levels of biological organization; almost all of which I had a chance to study in one form another.

### **Who were/are your mentors or psychological influences?**

I was extremely lucky to have mentors during my Bachelors and Masters years in India, who took a very expansive view of biology. In particular, Milind Watve at the Garware College, Pune, and Vidyanand Nanjundiah, Raghavendra Gadagkar, and Niranjana Joshi at the Indian Institute of Science, Bangalore, encouraged my every academic interest, whether it was computer modeling of bacterial growth, human olfaction, ant foraging behavior, or mathematical modeling of ecosystems. Subsequently, I moved to the SISSA in Italy, where Jacques Mehler exposed me to the harsh realities of empirical cognitive science. He, and Marina Nespore, who taught me a great deal about language (especially phonology), are my academic “parents.” At SISSA, I was also very fortunate to know Luca Bonatti and Lila and Henry Gleitman, who helped develop my rationalist leanings. SISSA saw a whole host of visitors, including Dick Aslin from the University of Rochester, whose lab I’ve joined as a post-doc. At Rochester, Dick, Elissa Newport, and Mike Tanenhaus have been extremely helpful in sharpening my research questions.

### **To what do you attribute your success in the science?**

Without a doubt, the primary source of any little success is the host of talented and wise mentors I’ve been so fortunate to have met. Then, I have also been very lucky in having some great academic friends to argue incessantly with; complain about experiments that don’t work; and bounce, test, and refine ideas with and provide warmth and support during difficult times. And as always, luck and timing have played their dutiful parts.

### **What’s your future research agenda?**

Reverse-engineering the human mind sometimes seems to be like Alice walking towards the Red Queen — the closer you believe you approach, the further away you find yourself to be. So I think my agenda will remain much the same for a fairly long while. Nevertheless, I would certainly like to expand the methodologies that I can use in my research. I’m quite convinced that only a multi-pronged approach can lead to any robust insights.

### **Any advice for someone just now entering graduate school or getting their PhD?**

I think the biggest lesson I’ve learned is to keep an open mind. It sounds so trivial, and yet I’ve found it the hardest thing to do! It’s so easy to discard a specific idea because you don’t like the general ideology, or don’t agree with the methodology or assumptions, or even just because you don’t like someone as a person. I think the best science is synthetic and communal.

### **What publication are you most proud of or feel has been most important to your career?**

Shukla, M., Nespore, M., & Mehler, J. (2007) An interaction between prosody and statistics in the segmentation of fluent speech. *Cognitive Psychology*, 54, 1-32. This paper uses adults to test how a proposed primitive computation — using distributional strategies to segment speech — might benefit from other sources of information, in this case, prosody (the rhythm and intonation of speech). I particularly like this paper because it goes into some depth in trying to conceptualize a high-level model of how different parts of the cognitive architecture might conspire to solve a particular task. It has also got several ideas that form the basis of some of my current research projects.



Winnifred Louis

**Winnifred Louis**

University of Queensland, Australia

Senior Lecturer

<http://www.psy.uq.edu.au/directory/?id=529>

**What does your research focus on?**

My research focus is on understanding decision-making in conflict. I study how people choose whether to respond to conflict cooperatively, confrontationally, or by trying to avoid engaging with the issues at all. My PhD research argued for the importance of “agentic norms” that link group identities (e.g., religion, ethnicity) to perceptions of the costs and benefits of actions (e.g., political violence versus voting). My recent work is looking at a particular type of norm conflict, when what others do (the descriptive norm) clashes with what others think should be done (the injunctive norm). In conflict, for example, you can perceive that your group thinks that peace and justice are good at the same time as observing that your group is waging war and tolerating inequality.

**What drew you to this line of research? Why is it exciting to you?**

I get excited by my research because I see it as helping to work out how activists and leaders can address and solve social problems. It’s hard to predict when a conflict of interests will motivate action versus apathy and when that action will be conciliatory or confrontational. Different groups with similar levels of grievance sometimes behave quite differently, whereas the timing of conflict escalation and resolution can take researchers as well as the wider public by surprise. Unless we understand when people want to create social change and how people choose what to do to create that change, we’ll keep getting bogged down in social inertia or partisanship.

**Who were/are your mentors or psychological influences?**

My PhD supervisor, Don Taylor at McGill University, inspired and still inspires me. He’s someone who combines passion, curiosity, a love of teaching, and public service — not to mention being a renaissance guy who also prioritizes his family, sports, and music. I also am influenced by people like Kurt Lewin and Robert Cialdini. I admire how they take their basic research into field studies, and translate the

insights from experimentation into applications for the community. So hard, so frustrating, so much fun, so worthwhile, so interesting! Much earlier in my career, Marty Wall at the University of Toronto taught me Introductory Psychology and changed my career path and my life for the better. People like John Arrowood and Ken Dion at the University of Toronto inspired me to study social psychology specifically and pursue it as a career. Colleagues like Matt Hornsey and Kelly Fielding at the University of Queensland helped me find my feet as a junior academic, and Debbie Terry, also at University of Queensland, mentored me in the politics and strategic side of academia. And Rhonda Amsel and Jim Ramsay at McGill helped me to realize how great multivariate statistics are and how important understanding the shape of data is to formulating content theories. So, I have had a wonderful set of mentors, and still do.

### **To what do you attribute your success in the science?**

I feel extremely lucky in my career progression; I attribute a lot of my success to the serendipity of going to great universities to study (University of Toronto and McGill University, in Canada) and then finding a wonderful place to work as a post-doctoral fellow and academic (University of Queensland, Australia). As a social psychologist, I think a lot of variance is explained by the environment! In interaction, of course, with my own passion and enthusiasm for research. I think it's hard to succeed as an academic if you don't have a strong internal drive; it's too demanding to be motivated by careerism.

### **What's your future research agenda?**

I'm still trying to work out how to create positive social change — world peace, justice, sustainable energy and consumption, etc.! I think that social influence processes (identity and norms) are critical, and I'm trying to understand how they can better be predicted and applied. So I'm researching factors that moderate conformity effects — I'm interested in disidentification and deviance/dissent, when norms conflict (the interaction of descriptive and injunctive norms), and when individuals' mental resources are drained by conflict.

### **Any advice for someone just now entering graduate school or getting their PhD?**

Academia is hilarious because you become a grad student primarily because you're good at multiple choice tests, meeting deadlines, and completing structured assignments. Often, you're motivated as a scholar because you're competitive and enjoy the rush of frequent positive feedback (A's and A+'s, every week or month for 17 years of primary school, high school, and undergrad!). As a PhD candidate, you progress primarily on the basis of whether you're good at setting your own goals, choosing realistic deadlines, and completing extremely unstructured tasks like designing, analysing, and writing up studies. These are skills you may hardly (if ever) have practiced in your undergraduate years! You go from years and years of affirmation and acknowledgement to years and years of vacuum, in which suddenly your most frequent feedback is rejection of your manuscripts by journals. The important thing is to realise that you're not alone, that most people go through periods of feeling like an incompetent and a fraud, and that you should "feel the fear and do it anyway," as Susan Jeffers would say. Don't let fear stop you from submitting papers and more broadly asking for feedback from your friends, advisor, and other staff on methods, theoretical frame, and general progress. There's a lot of professional knowledge that's only taught informally, and people will only tell you if you ask. And the best predictor of manuscript acceptances is manuscript rejections — throwing your hat in the ring!

### **What publication are you most proud of or feel has been most important to your career?**

I like most of my papers, but I am most proud I think of my 2002 paper in *Analyses of Social Issues and Public Policy*. It was a response to 9/11 and the quickly-developing “War on Terror” that Don Taylor and I put forward within weeks of the event. We were making the point that an oppositional framework could be counter-productive and broaden support for the terrorists and their political goals, which one could now argue turned out to be the case. A surprising number of non-psychologists corresponded with me about that paper, and I have had a lot of really interesting conversations and invitations as a result.

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Yair Bar-Haim

#### **Yair Bar-Haim**

Tel Aviv University, Israel

Senior Lecturer

<http://freud.tau.ac.il/faculty/YairBar-Haim.html>

### **What does your research focus on?**

The primary focus of my research is on anxiety, with a particular emphasis on the role of cognitive biases in the etiology and maintenance of anxiety disorders. I use cognitive-experimental paradigms and a cognitive-neuroscience approach to explore questions such as: To what extent are threat biases automatic? What is the relative involvement of state and trait variables in threat bias? What are the neural correlates of threat biases in anxiety? And, is it possible to modify emotional vulnerability to stress through direct manipulation of selective information processing? The primary goal of this line of research is to develop new strategies for diagnosis, prevention, and treatment of anxiety disorders. I'm also very much interested in basic cognitive-neuroscience research on topics such as face processing, perception of other-race faces, and neural correlates of visual awareness. These topics usually intersect methodologically with my primary research focus on anxiety.

### **What drew you to this line of research? Why is it exciting to you?**

Individual differences in susceptibility to stress, and variability in people's functioning in the face of threat has always interested me, way before I ever stated formally studying psychology. Because anxiety is viewed as a normative function that helps people adapt and respond efficiently to threats, I was

intrigued by the fact that anxiety disorders afflict a very large portion of the population (anywhere between 10-20 percent). Gradually I became more and more interested in this topic and started to study the cognitive mechanisms and neural circuitry associated with fear and anxiety.

### **Who were/are your mentors or psychological influences?**

My professional development followed an unconventional route and provided opportunities to closely interact with excellent professionals from diverse sub-disciplines of psychology. As an undergraduate student, I was fortunate to work with Avi Sagi-Schwartz at the University of Haifa. He taught me about attachment theory and parent-child relationships. His clear and deep thinking about developmental processes still has an important impact on my thinking. My practical inclinations then lead me to pursue graduate studies in clinical psychology at the Hebrew University of Jerusalem, with a focus on developmental psychopathology. Then, I crossed the lines and joined Nathan Fox at the University of Maryland to learn and conduct research in developmental-cognitive-neuroscience. Nathan taught me how to translate good questions into good science and introduced me to the fields of temperament and electrophysiology. Over the years, I was fortunate to work with a large number of colleagues, many of whom I consider my mentors and all of whom became close collaborators and friends.

### **To what do you attribute your success in the science?**

I'm not really sure — probably natural curiosity, good training, excellent collaborators, and the daring to follow my ideas even when these seemed at times difficult to study.

### **What's your future research agenda?**

Building on the accumulating knowledge about threat-related biases and their plasticity, my research will focus on translating this knowledge into useful evidence-based diagnostic tools and attention retraining interventions for anxiety disorders. This includes two major projects: one is on prediction of susceptibility to combat-related posttraumatic stress disorder and recovery rates following trauma, and the other is on the development of attention retraining protocols for anxious children and integrating these protocols with existing evidence-based treatments such as cognitive-behavior therapy and medication.

### **Any advice for someone just now entering graduate school or getting their PhD?**

My first advice is not to take my advice too seriously. People develop passion for science for different reasons, and their learning is influenced by many variables (intellectual, social, personal) not always fully known to them. Therefore, my only advice is to follow your heart, don't be afraid to get interested, and find the best mentors and collaborators you can to support the development of your ideas.

### **What publication are you most proud of or feel has been most important to your career?**

Bar-Haim, Y., Lamy, D., Pergamin, L., Bakermans-Kranenburg, M. J., & van Ijzendoorn, M. H. (2007). Threat-related attentional bias in anxious and non-anxious individuals: A meta-analytic study. *Psychological Bulletin*, 133, 1-24. Biases in processing threat-related information have been assigned a prominent role in the etiology and maintenance of anxiety disorders. In this article, we examined the

boundary conditions of threat-related attentional biases in anxiety and provided an integrative review of this research field. It has been exciting to observe that many of my colleagues were able to use this work and integrate it in their studies and theories.

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Lionel Naccache

### [Lionel Naccache](#)

Pitié-Salpêtrière Hospital & CRICM, Paris, France

Assistant Professor in Clinical Neurophysiology and Cognitive Neuroscience

#### **What does your research focus on?**

I'm exploring the psychological properties and the neurophysiological underpinnings of conscious processing. To do so, I'm comparing conscious and unconscious cognitive processing in a variety of situations both in normal subjects and in neurological or psychiatry patients. This activity combines empirical projects with theoretical works.

#### **What drew you to this line of research? Why is it exciting to you?**

The ability of a biological organism to discuss its own existence and its own ongoing cognitive processing has fascinated me since high school. Initially, I supposed physics and philosophy (in particular phenomenology) were the most relevant fields to address this issue. Then, I discovered clinical neurology and cognitive neuroscience.

#### **Who were/are your mentors or psychological influences?**

Among the numerous living people who influenced my way of thinking— in a way that is accessible to my own conscious report — I would specially mention Stanislas Dehaene, Laurent Cohen (clinical neurologist and cognitive neuroscientist), and Michel Poisson (clinical neurologist).

#### **To what do you attribute your success in the science?**

My scientific education and my daily activities are rather heterogenous, including such distinct fields as clinical neurology, cognitive psychology, neurophysiology, molecular neurobiology, philosophy, Talmudic studies, and a longstanding interest for literature (novels) and writing. I consider these multiple domains as a key source for keeping me moving on. These various modes of activity help me to question each possible “position of equilibrium” and therefore to proceed to new explorations.Â

### **What's your future research agenda?**

So far, I have worked mostly on the mechanisms associated with conscious access during perception: how do we consciously access perceptual representations, and what are the psychological properties and neurophysiological signature of this conscious accessibility? During the next years I desire to address the irrepressible function of “fictionalization” associated with conscious processing: as soon as we are conscious of a given representation, we make sense of it, and we include it to our mental fictions and to our subjective narrative constructs. I would like to contribute to this “cognitive neuroscience-fiction.”

### **Any advice for someone just now entering graduate school or getting their PhD?**

Keep your curiosity alive, don't be too dogmatic, don't learn “passively” but try to make sense of your knowledge continuously, even if to do so you will necessarily proceed to never ending corrections of these very personal semantic representations. Don't forget the pragmatic aspects of science (achieving projects, high quality publications, visibility of your work, etc.) And last but not least, get involved with neuroscience!Â

### **What publication are you most proud of or feel has been most important to your career?**

Bekinschtein, T.A., Dehaene, S., Rohaut, B., Tadel, F., Cohen, L. & Naccache, L. (2009) Neural signature of the conscious processing of auditory regularities. *Proceedings of the National Academy of Science*, 106, 1672-1677. In this very recent publication, I conceived with my colleagues a bedside electrophysiological test to identify one neural signature of conscious processing of auditory regularities. I like this work because it illustrates a mode of research combining the subtle psychological properties of conscious and non-conscious processing with recent neurophysiology tools in order to address a fundamental issue that is also extremely relevant for clinical neurology. We are taking the work from theory to bedside.

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Yukiyasu Kamitani

### **Yukiyasu Kamitani**

ATR Computational Neuroscience LaboratoriesÂ Japan

Head, Department of NeuroInformatics

<http://www.cns.atr.jp/dni/>



### **What does your research focus on?**

My research focus is on neural decoding of the human mind and behavior. I combine neuroimaging of the human brain (fMRI, magnetoencephalography, electrocorticography) and machine learning algorithms to make predictions about (or “decode”) what a person is seeing, attending to, or intending to do from measured brain activity. My lab develops new analysis tools and applies them to address scientific questions regarding how the brain represent our mental states.

### **What drew you to this line of research? Why is it exciting to you?**

I am a computational neuroscientist by training, but had an opportunity to collaborate with Frank Tonk (then at Princeton), an fMRI expert and an old friend of mine since graduate school. Soon after, I started learning neuroimaging, I quickly got bored with conventional functional mapping analysis using standard software, which required thousands of mouse clicks(!). So I set out to combine computational methods and neuroimaging, by extending the approach pioneered by Jim Haxby (his office happened to be just across from mine). This was a perfect match of my original scientific interest and my computational skills. I was excited to see the prospect of the machine-learning based approach, which could eventually lead to “mind-reading.”

### **Who were/are your mentors or psychological influences?**

My PhD adviser was Shin Shimojo. When he moved from University of Tokyo to Caltech, I moved together as a graduate student and helped to start up his lab. I don’t remember how I received official scientific training from him (sorry, Shin), but I learned much more from casual but inspirational conversations with him. Moving to Caltech, I was excited to be able to directly learn from world-class scientists, including Christof Koch, Richard Andersen, Mark Konishi, and Gilles Laurent. As noted above, Frank Tong and Jim Haxby crucially influenced my career, too.

### **To what do you attribute your success in the science?**

I was lucky in that as a student I was given a great deal of freedom and responsibility in doing research. I believe that shaped my independent attitude in science. In particular, helping to start up a new lab in a different country was a big challenge for me, but it provided me with the opportunity to think over the totality of research activities — not only doing research in a narrow sense, but also managing the lab, fund-raising, etc.

### **What’s your future research agenda?**

I look forward to advancing our decoding approach so that it probes further into detailed contents of our mind. I am also interested in how the “mind-reading technology” could influence the society by making accurate predictions about a person’s mental states and behavior.

### **Any advice for someone just now entering graduate school or getting their PhD?**

Build “generative models” of research. In statistics, a generative model is a model that generates observable data, typically given some hidden parameters. In science, understanding research findings

(through observable data) is of course important, but even more important is to learn how such findings are generated by researchers. You are lucky if you have good role models near you and can directly observe how they generate findings. When reading a paper, think of how the author(s) came to come up with the idea and simulate what you would do to test the idea. Such an attitude will greatly help you understand research findings and create original ideas.

**What publication are you most proud of or feel has been most important to your career?**

Kamitani, Y., & Tong, F. (2005). Decoding the visual and subjective contents of the human brain. *Nature Neuroscience*, 8, 679-685. This is my first paper on neural decoding, which demonstrated that machine-learning based analysis of fMRI data could read out detailed perceptual contents.

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Jörg Rieskamp

**Jörg Rieskamp**

University of Basel, Switzerland

Assistant Professor

<http://www.psychology.unibas.ch/economicpsychology>

**What does your research focus on?**

I focus on the cognitive processes underlying human behavior. This research follows the idea that people's decisions are often a result of the institutional settings in which they are made. Judgments and decisions can be understood as an individual adaptation process to an environment. The central goal of my research is to develop and test cognitive models to explain decisions. These models show that people often make decisions that are inconsistent with economic theory but yet are not irrational. In fact, they often illustrate how intelligent the human mind can be with limited cognitive resources.

**What drew you to this line of research? Why is it exciting to you?**

The debate on how rational people make decisions attracted my interest early on. The current financial crisis provides a challenging example: People do not make decisions in line with standard economic theory, and consequently markets can show unexpected exuberances. Gaining a better understanding of how people make decisions will inform economic theory and lead to better predictions of economic

behavior.

### **Who were/are your mentors or psychological influences?**

Gerd Gigerenzer, at the Max Planck Institute in Berlin, was my PhD advisor. From him, I learned how to ask interesting research questions and how to answer them. He also showed me that some ideas require persistent work and that revising a paper often requires more effort than writing the first draft. I did my post doc at Indiana University in Bloomington with Jerome Busemeyer. He introduced me to advanced cognitive modeling skills that have influenced my work ever since. Jerry also greatly broadened the scope of the theoretical questions I had been asking. In Berlin and Bloomington, I was surrounded by brilliant minds to learn from.

### **To what do you attribute your success in the science?**

I figured out what I wanted to do early on and I was committed to following my ideas. I have always tried to follow a theory-driven approach instead of just illustrating some fancy effects. Having a computational theory of a cognitive process underlying behavior lends itself to testing the theory against alternative models, which often leads to exciting insights about the mind.

### **What's your future research agenda?**

There are lots of interesting questions to address. In one of my future research projects, I will explore how learning affects financial decision making. When making financial decisions, people should take the expected returns, the risk, and the correlation between financial assets into account. These decisions are very complicated and people often do not follow economic theory when they make them. It is exciting to explore how people's investment decisions change when they are provided with learning opportunities. To explain the learning effects, I will compare various learning models. In general, the development of computational models of judgment and decision making will provide a better understanding of how people make decisions. Rigorous model comparisons that focus on the qualitative and quantitative predictions of our theories often lead to counterintuitive predictions that pure verbal theories of behavior do not allow. They also allow us to test theories that have emerged from different research traditions. It is exciting to see that researchers in cognitive psychology have followed rather different theoretical models to explain how people solve problems that only appear different at first glance — they often have many aspects in common. Bringing these different theoretical perspectives together to explain human behavior is a promising enterprise.

### **Any advice for someone just now entering graduate school or getting their PhD?**

At the beginning of a PhD, it is hard to have an overview of the interesting research questions and the relevant literature. It is worthwhile to discuss your own ideas in an intellectually challenging surrounding. A good mentor can point to exciting questions and teach you how to tackle them.

### **What publication are you most proud of or feel has been most important to your career?**

Rieskamp, J., & Otto, P. E. (2006). SSL: A theory of how people learn to select strategies. *Journal of Experimental Psychology: General*, 135, 207-236. In many areas of psychology, researchers argue that

people are equipped with a toolbox of strategies to solve the problems they face. When following this idea the strategy selection problem emerges: How do people select strategies from their toolbox? In this paper, we present a new computational theory that provides an answer to this question. We argue that people learn to select strategies on the basis of reinforcement learning. We show that depending on the environment, people will learn to select strategies adaptively.

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André Aleman

### **André Aleman**

University Medical Center Groningen and University of Groningen

Professor

[www.bcn-nic.nl](http://www.bcn-nic.nl)

### **What does your research focus on?**

I focus on three research strands: 1) cognitive basis of hallucinations, 2) emotional processing in alexithymia (the inability to understand or express emotions) and affective disorders, and 3) lack of insight in psychosis. To study these I use neuroimaging and methods from cognitive and experimental psychology.

### **What drew you to this line of research? Why is it exciting to you?**

I started psychology because I was interested in the human mind and in disorders of the mind. In fact, I wanted to become a clinical psychologist and treat people with mental disorders. However, I discovered that much remains unknown when it comes to the cause of mental disorders, and I found neuropsychology fascinating. I am especially attracted to studying psychotic phenomena, such as hearing voices when nobody speaks, because they are so bizarre. What goes wrong in the brain? In addition, I would very much like to contribute to new and effective treatments for these patients.

### **Who were/are your mentors or psychological influences?**

Edward de Haan (neuropsychologist) and René Kahn (psychiatrist) were my supervisors during my PhD thesis research. Besides sharing his wealth of knowledge on neuropsychology, Edward taught me the importance of starting from a sound theoretical framework. René taught me how to conduct research in psychiatry and that rewriting a manuscript several times before submitting it always improves it.

Anthony David of the Institute of Psychiatry in London is also a role-model for me. His research exemplifies the cognitive neuropsychiatry approach (i.e., linking cognitive psychology to psychiatry and neuroscience).

**To what do you attribute your success in the science?**

My drive to publish findings, be it original research or reviews of the literature on a certain topic, undoubtedly contributed. Besides trying to develop innovative ideas and conduct sound experiments, I try to be “publication-focused.”

**What’s your future research agenda?**

First, elucidating the cognitive and neural basis of poor illness awareness in psychotic disorders. After that, I would like to unravel genetic influences on emotional processing in the brain and its role in emotional disorders.

**Any advice for someone just now entering graduate school or getting their PhD?**

Look for guidance of renowned researchers in the field you are interested in. Read a lot of primary literature (i.e. research reports). Make sure you have ample hands-on experience with different types of data-analysis. And make every effort to get your research published!

**What publication are you most proud of or feel has been most important to your career?**

Aleman, A., & Kahn, R.S. (2005). Strange feelings: Do amygdala abnormalities dysregulate the emotional brain in schizophrenia? *Progress in Neurobiology*, 77, 283-298. In this paper, we propose that schizophrenia is an emotional disorder and specify abnormalities of the amygdala that could contribute to this disorder. One of our hypotheses was that structural volume reductions of the amygdala would be confined to the basolateral nucleus and not affect the central nucleus. This would explain why emotion perception is impaired, but autonomic reactivity is not. Subsequent research using postmortem brains confirmed this hypothesis. I have to confess however that some of our other predictions have not been confirmed in later research (that’s science I guess...).