Habibeh Khoshbouei (Neuroscience): Statement of Mentoring Philosophy

Foundational Philosophy: Developing Independent Thinkers and Leaders

The essence of my mentoring style is to create a research group environment that fosters independent thinkers, helping students to discover new knowledge and to solve complex problems, preparing them to make meaningful contributions in diverse scientific and societal settings. A successful mentor must help students to take ownership of the questions they wish to pursue, to master experimental approaches, and to experience the joy of discovery science. Equally important is helping them to communicate their findings effectively, amplifying the impact of their work to the benefit of a wider range of audiences and stakeholders. My mentoring philosophy is built on these pillars, focusing not only on developing technical proficiency, but on nurturing intellectual curiosity, self-confidence, and leadership.

Cultivating Early Independence: Empowering Students to Shape Their Path

The decision to pursue a PhD is a transformative step, requiring dedication, persistence, and a willingness to engage in sustained and rigorous intellectual exploration. From the outset, I encourage students to take an active role in shaping their research direction. This means that the initial months involve both structured and exploratory activities: reading relevant literature, identifying knowledge gaps, discussing ideas with colleagues, and performing pilot experiments. This early exploration can be overwhelming; yet it lays the foundation for independent thinking and self-directed learning. I provide guidance by offering the tools and support necessary for students to find and hone their own solutions. I think of it as providing an essential toolkit – not just a recipe book, but a way to access to a collaborative network of experienced lab members. This approach encourages students to take risks and develop a distinct focus that leverages the lab's research strengths, while addressing critical questions in the field.

Navigating Challenges: Individualized Support for Success

The journey to the Ph.D. degree is inevitably non-linear, one marked by trial, frustration and occasional triumph. As a mentor, I recognize that each student's path is unique, and her/his challenges extend well beyond momentary experimental setbacks. For each, I adopt an individualized mentoring approach that is grounded in active listening and open communication. Rather than offering prescriptive advice, I encourage students to reflect on goals, challenges, and opportunities for growth. I seek to foster self-awareness and empower students to develop strategies for success that align with their strengths, determination, and aspirations. My philosophy is to focus on what we can control – conducting high-quality, well-controlled experiments, maintaining scientific integrity, and communicating effectively – rather than fixating on external outcomes, such as journal impact factors or grant scores. This mindset enables students to build sustainable habits, maintain their motivation, and ultimately achieve authentic milestones for success in both academia and beyond.

The Power of Communication: Impact Through Clear and Purposeful Expression

Effective communication is essential for translating my students' scientific discoveries into meaningful impact. I emphasize scholarly communication that is not just about demonstrating knowledge; instead, it's about changing how others think. Whether writing papers, giving presentations, or preparing grant proposals, the goal is the same, namely to convey ideas clearly and persuasively. In my lab, communication is a collective endeavor. Manuscripts, grant applications, and presentations are reviewed by multiple lab members, fostering a culture of constructive feedback. I also encourage students to think strategically about their audience, tailoring messages that engage both experts and non-experts alike. These collaborative efforts

have consistently resulted in high-quality presentations and publications, with lab members frequently recognized for their clarity and effectiveness.

Building a Collaborative and Inclusive Research Environment

Creating an environment where both science and the young scientists at my lab thrive is a core aspect of my mentorship philosophy. I strive to foster a lab culture that is inclusive, equitable, and supportive, where every member is valued and empowered. This effort involves far more than technical training; it fostering leadership, teamwork, and effective time-management skills. I routinely involve students in decision-making processes, open discussions, and collaborative goal-setting. My lab is structured so that all graduate students take responsibility by mentoring undergraduates and technicians, thereby preparing them to take on supervisory responsibilities in their future endeavors. I have also significantly invested, and continue doing so, in my own personal development as a mentor by engaging in mentoring workshops and learning from others. Insights gained from these experiences have allowed me to introduce new strategies into the lab in support of my students' mental well-being and scientific productivity.

Mentorship Beyond the Lab: Preparing for Lifelong Success

Mentorship extends well beyond guiding students through their research projects. It involves preparing them for the diverse career paths they may pursue, whether in academia, industry, government, or other sectors. I take an active role in helping students build professional networks, identify career opportunities, and develop transferable skills such as critical thinking, communication, and project management. I also encourage my students to participate in conferences, workshops, and collaborative research initiatives, providing opportunities for students to broaden their horizons and gain valuable exposure. My mentorship also extends beyond the PhD, as I remain committed to supporting my former students in their careers. I take great pride in their achievements, whether they establish their own research labs, lead scientific teams, or excel in other roles. Witnessing their growth and success is one of the most gratifying aspects of my career.

Conclusion: Equipping Students for the Journey Ahead

An analogy that captures my mentoring style is that of a base camp at the foot of a vast mountain range. Each student embarks on her/his own ascent, choosing a unique peak that aligns with her/his passions and aspirations. While I obviously cannot accompany them on every step of the journey, my role is to equip them with the tools, skills, and confidence needed to navigate the challenges ahead. Over the years, I have had the privilege of mentoring numerous students, many of whom have gone on to establish thriving careers. Of the 18 PhD students I have mentored, three have obtained tenure-track faculty positions, one is a research assistant professor, three lead research teams, and the rest are pursuing postdoctoral training at top institutions, including the NIH. I am just as proud of the 150 undergrads who have worked in my lab. It is deeply gratifying to see all students succeed and to know that I have played a role in their development. In closing, mentorship is a dynamic and evolving process, shaped by the needs and aspirations of each student. My commitment is to create an environment, where students can thrive, both as scientists and as individuals, and to support them in achieving their goals, whatever paths they may later choose to pursue.