VIB-VUB CENTER FOR STRUCTURAL BIOLOGY

Lab Handbook

VIB-VUB Center for Structural Biology

Welcome to the VIB-VUB Center for Structural Biology (CSB)! We are a research Center operating at the interface of VIB (Vlaams Instituut voor Biotechnologie) and the Bioengineering department of the VUB (Vrije Universiteit Brussel). We are affiliated with both the Structural Biology Brussels (SBB) research group at VUB and the Center for Structural Biology (CSB) at VIB. All researchers employed in the Center therefore have a double affiliation which should be mentioned in all publications, oral and poster presentations, and email signatures. They will adhere to both VIB (listed in the Knowledge Base) and VUB ethical guidelines and will have access to the activities, trainings and networking opportunities offered by both institutions.

We wrote this Lab Handbook to ensure that all members of CSB and the wider research community have an insight into how our Center operates. Here, you will find detailed information regarding life as a CSB member, the expectations for researchers, and the support available for your research advancement. We hope this document serves as a useful resource throughout your time at the CSB. We expect newcomers to read and approve this document by the end of the ***first week*** *upon joining CSB. Any lab expectations specific to your group will also be provided by your PI. If you have any questions or concerns, please do not hesitate to reach out to your PI or lab manager. We welcome any feedback that you may have on this document, and how we can continue to improve researcher experience across the academic spectrum.*

- The CSB Team

VIB-VUB CENTER FOR STRUCTURAL BIOLOGY

Table of Contents

VIB-VUB CENTER FOR STRUCTURAL BIOLOGY

Section 1: Mission, Vision, and Core values

Excellent science. *The Center is dedicated to pioneering curiosity- and creativity-driven science in the field of structural biology. We address key questions related to biological systems, with a primary emphasis on understanding protein structure and signalling. We envision a unified approach in structural biology that considers cellular context and temporal dynamics, closing the gap between molecular and cellular resolution. Our interdisciplinary approach allows for outstanding education, ambitious scientific endeavours, and promotes research-driven economic growth.*

Shared facilities. *The Center supports the major methodologies for structural biology (biophysics, NMR, XRD, cryoEM and cryoET, nanobody technologies) integrated into shared platforms. Additionally, it offers Belgian and European scientists the opportunity to access cryo-EM. Nanobodies4INSTRUCT ensures worldwide access to nanobody-enabled structural biology. Our goal is to support our trainees in evolving into independent life science and structural biology researchers. Therefore, our facilities are managed by Core staff experts that provide training to new users to meet the highest scientific standards. Once users receive approval, they gain independent access to the facilities and equipment, with the Core staff members available for guidance when needed.*

Value for society. *CSB has an exceptional track record in turning fundamental research into value for society. The prime illustration of this is the development of Nanobody® technology, which gave rise to established spin-off companies. Furthermore, our Center's expertise in nanopore technology has led to partnerships with the leading nanopore sequencing provider. All this was achieved by combining scientific excellence and entrepreneurship, complemented by the support from VIB's Business Development team.*

Confidentiality and ownership. *Prior to start their research projects at our Center, every CSB member whether a BSc, MSc, or PhD student, must carefully read and sign the 'VUB waiver of rights' document and the 'VIB agreement concerning proprietary information and intellectual property rights' available on the SBB Sharepoint and mail it to the lab manager of your group with the PI in cc. These agreements encompass aspects such as intellectual property, disclosure, confidentiality, protection, and valorization of research outcomes.*

Mentorship and well-being are our key values that underpin our goals. Our Center represents a diverse group of unique minds, students, and professionals, with respect to race/ethnicity, gender identity, sexuality, nationality, religion, political affiliation, caregiver, and family commitments. We create a stimulating and constructive environment where researchers can openly share and discuss their thoughts and ideas in a respectful and transparent way. We take career development seriously, and strive to provide tools, resources, and guidance to help our staff and trainees to navigate their scientific career inside and outside academia. We encourage and help our trainees to proactively develop networks within the Center, the VUB, the VIB, and the rest of the world to foster their personal and professional growth.

We value rigorous science, open collaboration, transparent communication, and bidirectional feedback. We emphasize that a healthy mentor-mentee communication is always respectful and bidirectional, to the best interest of both parties.

We conduct research responsibly and with integrity, and we communicate our findings with the utmost transparency. Our basic and applied science missions demand high standards regarding rigorous data management, the cultivation of inter-personal trust, and effective communication.

You can find comprehensive details regarding the mission, vision, and core values of VIB on the VIB homepage.

Section 2: Roles & Expectations

Our group consists of *Students (BSc, MSc and PhD)*, *Early Career Researchers (postdocs, and ECR fellows), Core staff, Administration,* and *Principal Investigators (PIs)*. Here, we describe the responsibilities of each role, challenges they may face, what you can expect from them, and in return what they can expect from you.

Administration

Who do we mean? The administrative staff (secretary) of the Center forms the backbone of our operational efficiency, providing crucial support across various domains. They are not just a support system; they form an integral part of our cohesive work culture.

Day-to-day: Together with the Core Staff (lab managers) of each research group, they welcome newcomers, guide them through contracts, rules and procedures and introduce them to everyone through the display screens at the entrance of each floor. As a liaison between VIB HR and VUB HR, they facilitate seamless communication, ensuring that the needs of the Center are effectively addressed. They “facilitate” practical day-to-day management of operations, for example by assisting the shipment of mail and packages, overseeing common stocks, maintenance and repairs of common instruments, and sending out general announcements and requests to the group email. On Fridays, they bring the CSB team together with announcements and invitations to speaker meetings, fostering a collaborative environment with free drinks and snacks. Arranging travel and accommodation for invited speakers is also part of their responsibilities and assistance for SBB retreat organization or scientific events. By "facilitate," we emphasize that individuals seeking assistance from our administrative staff still retain ownership of their tasks; administrative responsibilities cannot simply be unloaded onto the administrative office.

Challenges: Every day again, the administration team faces a myriad of challenges, requiring a delicate balance of organization, communication, and strategic thinking to keep the operations running smoothly. First and foremost, communication is key. Coordinating efforts, disseminating information, and ensuring everyone is on the same page is a Herculean task. Given the large size of the team, the constant risk of miscommunication or information getting lost in the shuffle is ever-present. There are instances where that the administrative team will gently decline a task or redirect you to another service within the VUB or VIB administration, your lab manager, or your PI.

Undergraduate students

Who do we mean? Anyone actively working toward a BSc or MSc degree, including VUB-enrolled and visiting *undergraduate* students.

Day-to-day: These budding scientists bring a blend of enthusiasm, inquisitiveness, and perhaps a hint of nervous anticipation to the laboratory benches. While some may wear the white coat with

the confidence of seasoned researchers, others may still be acquainting themselves with the lab's unique cadence. Therefore, daily guidance on the bench or the computer by a mentor (PI, ECR or PhD-student) is essential for ensuring the smooth progress and success of the research project. Regular interaction with a mentor not only provides valuable insights but also fosters a collaborative environment and contributes to provide a truly immersive first experience to the trainee.

Support for undergraduate students: Undergraduate students are not just passive consumers of knowledge; they are active agents of change. In collaboration with their day-to-say mentor(s), they are expected to sharpen their critical thinking skills, learn to question assumptions, analyse information, and articulate their thoughts effectively. Undergraduate students can expect from their mentor to teach them time management, by setting up expectations and deadlines. Finally, they can expect to receive support for the writing of their reports or Master thesis (guidance and proofreading).

Expectations of undergraduate students: Undergraduate students are expected to showcase dedication to their academic pursuits through consistent presence in the laboratory (based on a schedule agreed to in advance with the mentor and considering classes requirements) and active participation in laboratory activities when possible (group meetings, seminars). It is imperative for them to follow safety protocols diligently, show respect for laboratory equipment and actively seek guidance in case of any doubt. To receive proper support for the writing of their thesis or report, undergraduates must ensure timely submission of their thesis text, adhering to the deadlines set by their supervisor. Moreover, they are held to high standards of academic integrity and ethical conduct. This includes proper citation of sources and a commitment to avoiding plagiarism. Research results and analyses are based on objective raw data (computational or experimental), that are preserved as a logged resource for later use. No data is fabricated, data can be simulated when explicitly required for a research line and agreed upon with a supervisor. Students keep their and their peers' research results confidential until public release in agreement with their supervisors.

Challenges: Balancing academic activities, social life, and personal well-being requires careful planning. Moreover, balancing the lab work, writing, and reading literature with classes and exams can represent a real challenge for some students.

PhD students

Who do we mean? Anyone actively working toward a PhD degree, including both VIB- or VUB-enrolled and visiting students.

Day-to-day: PhD-students are responsible for much of the research within each group. While most of their time is devoted to their own research project, they also engage in additional work that is indirectly related to research. In addition to their own research project, a PhD student's schedule typically includes supervision sessions, professional training (VIB or VUB), one-on-one interactions with other group members, participation in general lab meetings, and engagement in educational activities.

Support for PhD students: Every student holds full membership of the CSB community and is assigned to a PI. PhD students are regarded as trained professionals, and their ideas should be taken seriously by the entire group. PhD students meet with their PI regularly in a supportive atmosphere. They should feel empowered to identify mistakes made by fellow group members or admit instances where they require clarification. Supervisors should provide regular feedback and encourage students to cultivate their own ideas to progress their projects.

Expectations of PhD students: As PhD students are an integral part of the Center, they frequently play a crucial role volunteering to assist with essential group functions, such as managing instruments, organizing group meetings and journal clubs, extending a warm welcome to new members, and participating in educational activities. PIs can expect PhD students to provide regular updates on their progress and participate actively in group activities. It is essential for PhD students to realise that **they are in the driver seat of their PhD project**. Actively engaging in and scheduling one-on-one meetings with their supervisor is in their best interest to obtain the necessary feedback. When scheduling a crucial meeting that you and your supervisor have arranged, taking the lead in planning the timing and agenda, if needed, can prove highly advantageous.
PhD students are expected to recognise that their research is a form of training, and encountering challenges is a natural part of that learning process. Throughout their work and training, PhD students hold to the highest standards of academic integrity and ethical conduct. This includes proper citation of sources and a commitment to avoiding plagiarism. Research results and analyses are based on objective raw data (computational or experimental), that are preserved as a logged resource for later use. Data fabrication is strictly forbidden under all circumstances. Data simulation is only permissible when explicitly demanded for a research line and authorized by a supervisor. Students keep their and their peers' research results confidential until public release in agreement with their supervisors.

Challenges: Navigating a first major research project is a difficult task. To be successful, students must also develop "soft skills" including effective communication, and time management. Unexpected experimental setbacks are part of the research process - learning how to cope with setbacks takes experience, fortitude, and patience. These stressors can be exacerbated by additional factors throughout the degree, including the isolation of leading a research project, difficulty navigating work-life balance, and distance from long-standing support networks.

Resources: What to bring to a meeting with your advisor, How to be a graduate advisee.

Early Career Researchers (ECRs)

Who do we mean? ***Postdoctoral researchers and junior postdoctoral fellows***

Day-to-day: The ECR stage is marked by a transition to increasing independence. ECRs spend most of the time on their own research, whilst also collaborating on a broader range of projects. ECRs often have several further responsibilities, including being part of committees, student

supervision, and teaching. ECRs may also be asked to stand in for PIs when required and help with or lead grant or patent applications.

Support for ECRs: Besides regular meetings with their supervisor(s) to receive feedback on the research progress and practical advice, ECRs can expect senior group members to dedicate time to their career developments. Senior members should create opportunities for ECRs to take on increased responsibility, grow independence, and interact with the wider research community. Where ECRs are involved in supervision, students should take ECR guidance seriously, respect other demands on their time, and ensure their contributions receive appropriate credit.

Expectations of ECRs: On their path to independence, ECRs are often in charge of managing their research program, following-up on collaborations and making strategic decision. Smooth communication with the supervisor(s) is therefore essential. ECRs are expected to provide regular update on their research progress, that of the student(s) they mentor and the collaborations they are involved in. They should discuss any possible change in project trajectory with their PI in an open and timely manner. Having recently navigated a PhD/DPhil themselves, ECRs can provide valuable support to a student's career development.
Within the ECRs, postdoctoral researchers encompass different categories, each entailing specific duties. Those who have secured fellowships primarily focus on research, aiming to publish an outstanding paper within a three-year timeframe. Those in permanent positions hold key roles within the Center, unaffected by the need for specific results or paper publications within a certain timeframe. In addition to prioritizing research objectives, postdoctoral researchers with a 10% ZAP appointment at the university operate as independent researchers, bearing the title of professor along with its accompanying rights and responsibilities. They are actively involved in departmental 'vakgroep' meetings, securing research funding, and managing educational responsibilities like representing the department in student recruitment events, teaching classes, and overseeing practicals. Additionally, they take on the role of (co-)promoters for Master and PhD theses, contributing to juries for both defences, and handling a range of other responsibilities.
ECRs often have more time than senior group members to guide students in their research, can advocate on student's behalf, and often know who to approach when particular issues arise. A common advice for ERCs is to meet your PI halfway. If you and your PI have agreed to have an important meeting, taking the initiative and planning the timing and agenda, if necessary, can be quite beneficial. Further, it is helpful to understand how PIs communicate to help foster an effective working relationship. PIs can expect ECRs to facilitate the dissemination of expertise in the group, and support students and technical staff by providing crucial constructive feedback.

Challenges: Transitioning to increased independence places considerable responsibility on new ECRs. The role is often accompanied by changes in research group and/or topic, which requires adjustment. ECR positions are inherently transitional, and this stage in a researcher's career is often accompanied by growing personal commitments (e.g., starting a family). Managing a diversifying workload, the uncertainty associated with fixed-term contracts, and reduced

supervisory support can be challenging. The VIB-VUB centre fosters a healthy work-life balance in which the demands of personal life, professional life and family life can be met.

Principal Investigators (PIs)

Who do we mean? *Senior academics leading research groups, often with a faculty title*

Day-to-day: Research is a core component of any PI's job. Most senior PIs engage in research projects via supervision and collaboration, typically directing multiple projects in parallel. In addition, PIs shoulder numerous responsibilities that are not directly research related, including committees, group logistics, leadership in large-scale initiatives, teaching, and wellbeing of the staff and students. PIs must often switch their work context from hour to hour and regularly spend entire workdays in meetings on disparate topics.

Support for PIs: Students and ECRs can help PIs by reliably completing tasks they have agreed to handle. However, it is better to decline a task that does not fit your schedule rather than accepting and not accomplishing it. It is helpful to learn through effective PI/mentee communication to distinguish which decisions need PI input, and which can be acted on independently. In this way, you will establish the boundaries of your action/decision zone. Flexibility in scheduling can be a great help for a PI who has multiple demands on their time.
PIs can find assistance in addressing their leadership challenges through targeted management courses provided by VIB and VUB. These courses offer support for recharging energy, gathering inspiration, and gaining self-insight through group and personalized coaching sessions.

Expectations of PIs: Students and ECRs can expect PIs to provide support and clear communication of expectations. PIs should play an active role in the research being undertaken, whilst offering guidance and mentorship on a broad range of research and career topics. Each student/ECR is likely to have their unique mentorship requirements. It is therefore helpful to carry out some self-assessment to bring-up discussion topics that are personally important when meeting your PI. PIs should advocate for more junior researchers, often acting as a "sponsor" to identify opportunities for career advancement. Students and ECRs can expect their PI to make time for regular supervision meetings. PIs are expected to peruse and offer insightful input on manuscripts, master's theses, and PhD theses. PIs should support group members during career transitions, including to other institutions or outside academia.

Challenges: PIs find themselves managing conflicts at short notice, and handling delicate situations that may impact many people. Busy PIs will regularly receive >100 emails per day and send nearly as many. As a result, short emails are easier to respond to, and brief responses from PIs often reflect efficiency than criticism. Whilst delays and mistakes can be interpreted as carelessness, they are often simply a consequence of navigating everything that requires attention. Nevertheless, PIs should remain open to feedback that their challenging workload is leading to problems for group members and be open to discussions around improving group management.

Core Staff

Who do we mean? Lab managers, Lab technicians, Lab support, and staff scientists. Staff on long-term contracts who are responsible for day-to-day function of the Center, in charge of managing facilities and labs. Staff scientists are experts with a significant (multi-)PostDoc experience and an in-depth knowledge of a given, often highly specialized, technology.

Day-to-day: Lab managers, Lab technicians and Lab support staff perform distinct yet complementary roles, contributing to the seamless operation of a lab on a daily basis. They provide expert support to students and ECRs and contribute to the continuity of technical expertise and know-how within the Center.

Expectations of Core staff: Lab support staff are the silent heroes of the lab, ensuring its smooth operation. They prepare and autoclave culture media, manage package distribution efficiently, and maintain hygiene by washing glassware. Their organizational skills enable seamless operations, allowing researchers to focus on their work uninterrupted. In essence, lab support staff are the backbone of the laboratory, providing essential support services behind the scenes.

Lab technicians are the skilled instrumentalists of the lab. They focus on hands-on tasks related to experiments, analyses, and the day-to-day technical aspects of research. Lab technicians are proficient in operating and maintaining laboratory equipment, preparing reagents, and conducting experiments under the guidance of ECRs or PIs. They play a crucial role in data collection, sample processing, and troubleshooting technical issues within the lab. Lab technicians are the experts who ensure that experiments are executed accurately and efficiently. Moreover, lab technicians are actively involved in practicals for students, contributing to the educational aspect of the lab.
Lab managers serve as the conductors of lab activities, overseeing all operations. Alongside their roles as lab technicians, they manage and coordinate lab functions, handling administrative duties like budgeting, procurement, and safety compliance. During the biweekly lab management committee meetings, they facilitate communication between all labs and higher levels, ensuring that all the technical lab activities are in line with broader CSB objectives. Additionally, they contribute to strategic planning, project management, and cultivate a collaborative and efficient work environment. Engaged in various research projects, they offer expertise to collaborators and provide technical services.
Lab managers also take charge of organizing and managing lab spaces and equipment. With long-term contracts, they play a pivotal role in preserving technical expertise within the Center and individual labs, ensuring knowledge transfer from one generation of students and ECRs to another. Additionally, lab managers play a role in training new lab and equipment users, evaluating their proficiency before granting access to equipment.
Staff scientists are experts who facilitate and integrate a specific technology into CSB research projects. They often manage the facility and serve as contacts for the use of high-end equipment. They ensure smooth functioning and timely upgrades of the research infrastructure

to guarantee the highest level of performance. However, their role goes well beyond the management of a facility or an instrument. They must continuously scout for the latest improvements and breakthroughs to incorporate them into our workflow and maintain CSB at the cutting edge of the technology they are responsible for. They actively engage in scientific discovery and innovation within the Center, by advising on technology implementation in research projects and training and supervising its primary users (undergrads, PhD students, PostDocs and technicians). They oversee or perform the acquisition, analysis, and interpretation of the research data in the context of a given project.

Support for Core staff: We expect all group members to *always* treat core staff with respect, and to value their time and high degree of professional expertise. Core staff are highly trained individuals, often with unique expertise not held by members of the Center on temporary contracts. When their contributions go beyond what would be considered conventional 'support', they should be recognised appropriately (for example, co-authorship on an upcoming publication). PhD students and ECRs can expect staff scientists to actively steer the direction of the research project in regards of the technology they are responsible for. It is therefore recommended to discuss in detail the research project, the organization of the collaboration, and publication expectations.

Challenges: Juggling multiple projects demands navigating interactions with various lab members and external collaborators, all while ensuring meticulous planning.

VIB-VUB CENTER FOR STRUCTURAL BIOLOGY

Section 3: Research Group Culture

Describing expectations surrounding interactions and behaviour

Workplace Conduct

We aspire to an inclusive work environment, in which all members can thrive and achieve their goals.

Conduct in meetings: The CSB community meets twice a month throughout the academic year, once to attend internal presentations from selected students and ECRs (Friday Wrap) and once for an invited seminar. We expect all group members to attend whenever possible and avoid the use of devices (laptops and phones) as a matter of respect for presenters. We aim for an atmosphere where people feel comfortable asking questions regardless of seniority. When possible, we prioritize questions from students and ECRs. Questions should be asked in a respectful, amicable, and friendly tone with the aim to provide constructive advice. When offering criticism or feedback, it is essential to maintain a focus on the research itself rather than targeting individuals. Internal presentations often contain unpublished work, and we impose confidentiality from all attendants. Respecting this confidentiality not only safeguards the intellectual property and creative process of our colleagues but also fosters an environment of trust and collaboration. By upholding these principles, we create a space where constructive discussions and open dialogue can thrive, ultimately benefiting the advancement of knowledge and research within our Center.

Work interactions: Many of our desks are in “open plan” offices. Be considerate of people around you who may have different needs/preferences, and follow basic open plan etiquette (for example, avoid distracting noises or spilling out into adjacent spaces). Longer and louder discussions should take place in dedicated meeting rooms or a social area. We extensively use online video platforms and messaging channels to ensure smooth communication. However, meetings via online video platforms can be draining, particularly for neurodiverse individuals. We encourage members to balance the benefits of these platforms against the downsides and appreciate that the needs/preferences of others may differ.

Lab space and equipment: The Center provides lab space and scientific equipment, either dedicated to specific groups or shared within the SBB/CSB community. The following basic lab rules must be followed at all times:

- All individuals must wear a white lab coat while conducting experiments in the lab
- Strict adherence to safety protocols is mandatory
- Laboratory equipment must be handled with care, and users should seek guidance promptly in case of any doubts or equipment breakdowns

- Any incidents involving equipment must be reported immediately to the responsible lab manager to ensure appropriate measures are taken
- All equipment-related incidents and injuries occurring in the laboratory must be promptly reported to the lab manager. In additon send and email to preventie@vub.be with your PI, lab manager, and Anthonie.Hellemond@vub.be in cc. Detailed instructions can be found in the GLP document located on the VUB CSB/SBB Sharepoint. Transparency regarding incidents is appreciated, while concealing breakdowns or accidents is considered as misconduct.

Socialising: Building a cohesive group means getting to know each other. We encourage group members to have lunch together at work, be forth-coming, respectful and socialise outside of working hours. We want everyone to feel welcome at social gatherings - alcohol consumption is always optional, and professional but friendly behaviour is expected at all times. Also, some exclusive events await you, providing opportunities to connect and celebrate together. You will be invited to join us for our vibrant New Year celebration, witness the academic achievements of your colleagues at PhD defences, immerse yourself in the collaborative spirit of our biannual lab retreats, and participate in the annual gathering at the VIB meeting. These special occasions are not just milestones; they are experiences that weave the fabric of our community, fostering camaraderie and shared memories. Your presence at these events is not just welcomed; it is an integral part of the vibrant tapestry of our collective journey. None of these events are obligatory, and non-attendance will not impact our commitment to your professional development.

Inappropriate behaviour: We expect all group members to contribute to a positive atmosphere grounded in mutual respect. We do not tolerate bullying, harassment, victimisation, or discrimination. We recommend taking the following steps if you witness or is subject to inappropriate behaviour:

- For minor cases (e.g. inconsiderate interactions that stop short of bullying), you can speak to the person behaving inappropriately if you feel comfortable doing so.
- However, you should not feel you have to resolve any situation yourself. Talk to a person you trust such as a friend, family member, your PI ,or a trusted colleague. Moreover, both the VIB and the VUB provide specialized support through confidential advisors, ensuring that your concerns are treated with the utmost confidentiality. For VIB, you can connect with Veerle Quivreux via Teams or reach her directly on her office phone during working hours. For VUB, you can report transgressive behaviour at 02/6291500 or reportit@vub.be, knowing that your communication will be handled confidentially.

Your discretion and support will contribute to maintaining a respectful and safe environment for everyone in our community. Resources and mechanisms for this are listed below.

Bullying and harassment resources at VUB and VIB: VIB harassment policy, VUB transgressive behaviour policy, VIB Active bystander training.

Authorship guidelines: It is important to value each contribution, including technicians, lab managers, and collaborators. The first author is typically the student or ECR who has taken the lead in the project and has played a substantial role in planning, performing and analysing key experiments. The PI, in consultation with the first authors, is responsible to ensure that all contributions are appropriately credited. This is best managed through continuous communication between contributors and collaborators. The PI advocates for the lab member's contribution in external collaborative projects. Please be honest about your contributions and follow the guidelines set by VIB, the journal or the funding agencies. In situations where there are two or more individuals who have made significant and equal contributions, co-first authorship is possible. In case of patent applications, we require all contributors to identify their inventive contributions in writing. This practice helps maintain transparency and ensures that each contributor's inventive input is duly recognized and protected. In case you have a question on authorship or need advice, please contact René Custers.

Authorship guidelines resources: VIB guidelines for authorship, Nature Portfolio Editorial Policies on Authorship, NIH General Guidelines for Authorship Contributions

If you wish to report matters concerning science, wellbeing, or issues pertaining to national or European Union law, please utilize the three buttons located at the bottom right of every page on the VIB website.

Work and Wellbeing

Looking after your long-term wellbeing is crucial to being able to achieve your full potential.

Setting expectations: A key aspect of being happy in your career is having clearly articulated and agreed expectations. However, it is often difficult to predict how long a given task or step will take. Discuss and agree on target project timelines, but remain flexible, and be understanding when timelines slip. Communication is key to managing expectations and setting work boundaries. If you feel your workload is impacting your wellbeing, you should discuss it with your PI/supervisor.

Working hours: Expected working hours are stipulated in your contract. This is the number of hours you are expected to actively work towards advancing your tasks, research or training (including reading literature, attending scientific talks, writing reports, etc …). In general, we do not dictate time-schedules. However, because we are working with (sensitive) biological materials and living organisms your time-schedule may sometimes include early or late hours or weekend work. However, we expect everyone to organise working hours to optimally fit productivity with your personal or familial activities and those of your co-workers.

In conclusion, Center members should find a schedule and approach that works for them, discuss this with their PI, and raise concerns if they are struggling to be productive. You should not feel

obliged to reply to emails or other communication platforms outside of your own working hours and should respect the working hours of your colleagues.

Work-life balance: A healthy work-life balance helps to manage the stresses of academic research. This means making time to do things you enjoy and for necessary personal activities. Beyond adopting daily working hours to sustainable levels, we strongly recommend taking several week's holiday per year completely away from work, including work-related email. Timing for your holidays is generally up to you, but you may need to work around other constraints or deadlines.

Mental wellbeing: Time to relax away from work is a critical contributor to mental wellbeing. If a colleague mentions that they aren't feeling okay, the most important thing is to simply listen to their concerns. If you are feeling mentally unwell, you are encouraged to take a holiday leave to rest or relieve stress or ask a doctor to prescribe you a sickness absence if your mental state requires medical help. You should not feel obliged to explain to your PI why you are taking a sick leave. If you are uncertain what mental health support provisions are available, speak with your PI or HR.

Resources at VIB and VUB: VIB mental wellbeing, VUB wellbeing resources, VUB students' mental health, Seven steps towards health and happiness in the lab.

Equality, Diversity, and Inclusion (EDI)

We are firmly committed to creating an inclusive environment that celebrates the diversity of our group members and promotes equal opportunity. By cultivating a culture of inclusivity and respect, we strive to create a sense of belonging which supports the innovative work of our group.

The Personal & The Professional: Every group member represents a unique intersection of experiences and identity and should feel comfortable bringing their whole selves to work. We aim to nurture this by understanding how our differences interact with both our professional and personal lives and influence our individual aspirations and needs.

Support: Personal background frequently intersects with mental wellbeing, and workplace exclusion and inequality can contribute to mental ill-health. PIs receive training on how to support group members and can talk through issues you face. If you are facing personal issues, we encourage you to get in touch with a responsible person, whether they are your direct PI or another senior person you consider as a mentor. They will treat these conversations as highly confidential, provided it doesn't ethically compromise them or pose a risk to your wellbeing.

Building communities: EDI spans a broad range of topics and issues. Many are unfamiliar when first encountered and can be uncomfortable to talk about. VUB holds regular educational events aiming to normalise respectful and thoughtful conversations related to EDI, particularly around

how these issues manifest in academic workplaces. These sessions aim to help you understand the challenges your colleagues face and how you can act in solidarity.

Resources at VIB and VUB: VUB EDI strategy, VUB equality action plan, facts and figures, VIB gender-equality plan, VIB EDI officer

Good Citizenship

Our success is largely down to individual members pitching in to help each other.

Being a good citizen: As a member of the Center, you are strongly encouraged to get involved with some form of lab service. This kind of "good citizenship" ensures the smooth day-to-day running of group activities and ensures that the burden does not fall unfairly on a few individuals. Doing so, you will also develop key "soft skills" and build yourself a strong network and solid professional reputation.

What constitutes good citizenship? Tasks that primarily serve the laboratory's interests rather than your personal gain encompass activities such as assisting in teaching and practical courses, providing guidance to colleagues, handling group administrative tasks, volunteering for research studies and organizing social activities. Importantly, there is no expectation for everyone to participate in all these activities, and there is no requirement to explain why one may choose not to engage in certain forms of communal involvement.

Finding a balance: Good citizenship activities can be time consuming. It is important that they do not significantly impact your research progress. We also recognise that not everyone has the capacity to take on additional work - for example, due to disability or caring duties. We recommend discussing any potential activities that may take time away from your main research with your PI.

Conflict of interest: PIs often face conflicts of interest between what's best for the lab and what's best for the lab members' careers. There is opposition between wanting to keep a talent and helping people to move on with their careers. However, PIs should prioritize people aspirations and long-term goals. Moreover, we occasionally do sponsored research and consult for companies. These activities can create potential financial conflicts of interest. PIs and researchers should strive to be as transparent as possible about this work and relationships while honouring confidentiality agreements.

The CSB EcoTeam has been at the forefront of fostering environmental consciousness and sustainable practices within our Center. It aims to foster greener and more sustainable research practices by elevating the awareness of the collective impact of small, eco-conscious choices. To achieve this, they have implemented various initiatives, including the communication of eco tips through the display screens present at the entrance of each CSB floor. They actively participate in planting trees and bushes on the campus, enhancing visual appeal and promoting biodiversity

and ecological balance. Their dedication has earned them a silver medal in 2023 for completing 35 tasks listed in the Green Impact program of VUB. In the future, they are planning to monitor and report on lab energy consumption and to diversify waste collection.
To expand they reach beyond our research center, they aligned forces in 2022 with the VUB Green Team to make the whole VUB campus greener and more sustainable. In 2023, the CSB EcoTeam has joined the VIB Sustainability Teams. Such strategic partnership provides a platform to coordinate the VIB sustainability policy across Flemish universities and to align the Center's policy with broader organizational goals, fostering a culture of sustainability that extends beyond our immediate community.

Resources and contact: CSB Eco team, CSB postdoc association, CSB PhD community, VIB postdocs association, VIB conflict of interest policy.

VIB-VUB CENTER FOR STRUCTURAL BIOLOGY

Section 4: Developing as Researchers

How the group supports your development as a researcher, and your expectations surrounding best research practice

Explore the excellent training programs provided by VIB

Career Development

Building your skills and preparing for the next career move

Developing your CV: We encourage all group members to dedicate time to developing skills which support their career progression. A key metric upon which researchers are evaluated is their publications. Publications demonstrate the ability to bring projects to completion, open up opportunities for career progression, and are valued in academia and industry. We do recognise that not everyone wishes to make their career in academia. Our role is to cultivate your skills and expertise for whatever path you hope to pursue, and help you timely find the next position that is right for you. There are several opportunities to get involved in a broad range of skill-building activities outside of your main research, including teaching, public outreach, and committee activities. Participating in these activities is beneficial not only for the individual but also for CSB as a whole.

Writing and publishing: Talk to your PI about writing expectations. Many PIs expect their students and postdocs to substantially contribute to the writing of their own fellowships and papers, and it is a key skill to acquire for any scientific career. Many learners are often afraid to show PIs anything other than finished work. **This is a mistake!** The first draft can be very rough. If you think it's time to start a paper, schedule a meeting with your PI to discuss the outline. Ask them about their writing preferences (docx, Google Docs, etc ...) and their favourite tools (for figures, reference managers) and use these tools consistently through the manuscript preparation process. If you are stuck, schedule a meeting with your PI and ask them for help or even to do a writing session together to teach you their writing methodology. Start drafting figures early in the manuscript preparation process. Your PI might ask you to discuss and prepare figures even before starting the writing. This is because the structure of the figures (how information is split, what is highlighted) often define the sections and structure of the manuscript. Ask your PI about their preference regarding embedding figures into the text, figure preparation tools, etc … Every CSB paper should list the following two authors affiliation: 'VIB-VUB Center for Structural Biology, VIB, 1050 Brussels, Belgium' and 'Structural Biology Brussels, Vrije Universiteit Brussel, 1050 Brussels, Belgium'.

Writing grants and fellowships: For all science career paths, being able to explain yourself and the value of your work is an invaluable skill in academia and industry. It is an opportunity to practice skills in grant writing and effectively communicating scientific concepts to a wider audience. Funding our research is vital to keeping the lab running and successful grant writing can open doors for the future and enables the lab to reallocate funds to other projects and

resources. Getting fellowships and scholarships can be difficult and sometimes you're competing against colleagues for the same funding mechanisms. It's okay! We learn from our previous attempts and keep trying.

Resources: The art of writing science, Simple rules for concise scientific writing, David Mobley writing tips, David Mobley Style guide, Arjun Raj Style/figure guide. Both VUB and VIB regularly organize scientific writing workshops for students and postdocs.

Career progression: When it comes to considering the next career move, we are dedicated to supporting individuals, regardless of whether they aim to stay at VUB or VIB, take up a teaching post at another institution, or move out of academia. To guide their career progression, CSB members of all levels (technicians, lab managers, core staff, PhD students, postdocs, supervisors, and PIs) are expected to substantiate regular short-term coaching and project follow-ups by a yearly mandatory feedback exchange moment. During this yearly exchange, both the leader and the team member exchange their view on the overall performance, effort and mutual collaboration and translate their conclusions into new agreements for the next year (see below). If you and your PI have agreed on planning a feedback meeting, it is useful to follow-up and schedule a meeting time yourself if necessary. PIs are always happy to help with applications and interview preparation, but they might need a reminder. Ask your PI and other mentors in the Center to introduce you to alumni or colleagues who can offer advice. Senior members have established relationships with academic and industry colleagues world-wide and can often provide an introduction. Networking is key for job hunting and is largely under-estimated in the Belgian system. We are also particularly experienced with securing personal research fellowships or translational/start-up funding. Fellows in the CSB are keen to pass on their hard-won knowledge, so don’t hesitate to ask for advice.

Feedback exchange moments: The key to this coaching lies in open communication between leaders and their team members. These dialogues revolve around addressing questions like "What are your expectations of me?", "What are my strengths?", "In what areas do I need improvement?", "What opportunities lie ahead for me?", and "How will we collaborate?". These exchanges can have different format, but often involves the written preparation of an Individual Development Plan (IDP) to help both parties prepare the points they might want to raise, followed by a one-on-one discussion. The exchanges consist of putting all cards on the table. The mentee is invited to share the points he/she would like to discuss in terms of accomplishments, strengths, challenges, ambitions, collaboration, ... The supervisor shares his/her points of attention. Together the team member and the supervisor set the agenda for the discussion. During the feedback exchange moment, the emphasis lies on the exchange of ideas and deriving valuable insights from the exchange. The discussion should lean towards a forward-looking perspective rather than dwelling on the past. Instead of attempting to persuade each other about past events or causes, both parties should seek future opportunities and strategies to capitalize on them. At the conclusion of this exchange, key takeaways are documented in a report, primarily serving as a practical tool for the team member and their supervisor.

Resources: ScienceCareers myIDP tool, UCSD IDP guidelines, Christopher Huggins Tips and Tricks for academic networking, University of Colorado guide to academic networking, Networking in academia.

Reading and following the scientific literature: As a scientist, it should be a pleasure to keep up with current literature. We believe one should dedicate a few hours each week to scanning and reading new preprints and journal articles. We also realize that it is a difficult task given the high stream of new research in some field. Therefore, we recommend leveraging online research feeds to keep-up with the most relevant work, such as RSS or Twitter. Inevitably, you'll end up reading in depth only a few of the recent work but scanning through many papers is very useful to broaden your scientific culture and tap into new ideas for your project, grant application or a defence. If you need help learning how to critically read a paper or make a review report, ask your PI for advice, or start a journal club within your research group. Journal clubs can have many formats, from in-depth review of the strength/weaknesses of a paper to a 1-slide summary of several papers on a similar topic.

Resources: Fraser lab method to following scientific literature, How to keep-up with the scientific literature, A guide to start your own journal club, Ten tips for scientific journal clubs.

Open and Responsible Science

Our commitment to engaging with the best scientific practice

Open science: Open science practices serve multiple aims for the scientific community. They facilitate reproducible research and accountability for data and findings, help the field move forward more rapidly by avoiding duplication of effort, and are in line with increasingly common initiatives from funders and publishers. Our centre is strongly committed to promoting best open science practice. Talk to your PI to decide of the best open science strategy and of the best timing to publicly release your findings and your data.

Reproducible research: Keeping your research outputs (code, data, figures, etc) in a reproducible state greatly facilitates you and others (sometimes future students and ECRs) returning to it at a later date. Ensuring your work is well documented is good scientific practice for reproducing your approach and catching mistakes, whilst facilitating data sharing. VUB and VIB data stewards are great resources to help you to manage your data (see contact below). Ask your PI about policies specific to your group. We encourage the use of an Electronic Lab Notebook (ELN) to describe and date the performed experiments, which are usually linked to the data deposited into your group's SharePoint. Some funding agencies require the submission of a data management plan (DMP) through an online tool. Students and ECRs who are added by their PI as managers of a DMP for a specific grant are expected to play an active role in updating the DMP as appropriate through the duration of the project.

Resources at VIB and VUB: VIB research data management training, VIB e-class, VIB How to write your data management plan, VUB data management office, VUB Data management and Open Science guidelines.

Discovering mistakes: Catching past mistakes is an important aspect of good scientific practice and a key part of the research process. Mistakes happen to everyone, and having reproducible research outputs provides you or others a better opportunity to catch and correct inevitable errors.

Research conduct: Our Center is wholly committed to ethical and responsible research conduct. Please talk to your PI/supervisor if you are unsure of the ethical implications of any given action, if you feel pressure to engage in ethically compromising behaviour, or if you observe research misconduct happening around you. If you feel you are being asked to engage in practices that you are uncomfortable with, it is always best to respectfully raise your concerns in the first instance. If you feel your concerns are not being given serious consideration, please talk to your PI, a secondary advisor, or the head of group/division. If the issue cannot be resolved locally, refer to the VIB and VUB guidelines for reporting research misconduct.

Resources at VIB & VUB: VIB responsible research guidelines, VIB ethical misconduct reporting and procedure, VIB image manipulation policy, VUB ethics and integrity guidelines, VIB responsible research brochure: awareness, standards and accountability.

Collaborating

How to get the most out of scientific collaborations

Why collaborate? Collaboration in research enables researchers with complementary expertise to work on different aspects of a project, generating results that cannot be produced by an individual. Individuals with common expertise can also produce more innovative research by exchanging ideas. Collaborations often lead to co-authorships and demonstrate your willingness and effectiveness to work as part of a larger team, a set of skills broadly valued both in academia and industry.

When to collaborate: Although collaboration is almost always beneficial for all involved, it represents a commitment that should only be undertaken after careful consideration. It is critical to discuss collaborations with your PI and ensure to include them in communications with collaborators at all times. It is their responsibility to ensure that collaborations run smoothly, and that credit is appropriately shared. Moreover, collaborations can slow progress on your own research, while over-committing also risks not delivering for collaborators and eventually undermine inter-personal trust. If you and your PI cannot agree on whether to take on a collaboration, seek advice from an independent PI.

Setting expectations: Be clear on the amount of time you expect to contribute to a given collaboration. There are no universally accepted formulas, but senior academics usually have a good sense of norms for co-authorship. If you and your PI feel that an authorship is warranted, you can expect them to negotiate this on your behalf. They will also possess an intuitive sense of the appropriate timing for this conversation. As a general rule, it is advisable to initiate these discussions early. When considering whether to offer co-authorships on your papers, discuss this with your PI at an early stage. Revisit this discussion when you are ready to publish, taking into account the authorship guidelines mentioned earlier.

Travel and Conferences

Our expectations about travel, including collaborative visits, and conferences

Conferences - The Basics: Conferences provide a fantastic opportunity to present your work and engage with external colleagues. If you're giving a conference talk or presenting a poster, please remember including appropriate credits to collaborators and the CSB, VIB and VUB logos. For the PIs, a talk or poster presentation from a student or ECR is a great way to represent the lab in front of the international scientific community. They will be happy to help preparing the presentation and proud of your performance. Conferences typically include scientific talks, poster presentations, and educational sessions. If you find a conference you want to attend, talk to your PI. Considerations include: match to your research topic, readiness of your research for presentation, opportunities to learn and network (e.g. when looking for a postdoctoral position), timing, and logistics.

Planning and what to expect: The primary aims of attending conferences are to present your research, represent the group, and to learn about your field. Use your time wisely: expect to be busy and plan ahead. Discuss your plan with your PI. At the conference, ask questions and be curious - most people love to discuss their research. Discussions can lead to new insights, collaborations, and often long-term friendships.

Looking out for lab mates: Although rare, people can end up in vulnerable situations during work travel. We expect lab members to look out for each other and strongly recommend establishing a medium for communication with lab mates attending the meeting. If you see a colleague who appears in an uncomfortable situation, consider whether you can assist them. Should you encounter problematic behaviour by a conference attendee, please talk to a PI or conference organiser.

Expectations: Whilst travel can be a perk of the job, it can also present challenges. Travel can be a hardship for those with disability or caring responsibilities. Furthermore, people may feel travel to specific places is unsafe or not morally justifiable. You should not feel pressured to travel and should not experience disadvantages if you don't or can't travel. A PI can discuss your concerns and advise on means to alleviate them.

Logistics: There are several details that need to be arranged before travelling. Researchers need to consider what funding sources are available to cover travel and conference costs. While your PI has likely planned a budget for a certain number of conferences per group member, we strongly encourage researchers to apply to other sources of funding, traveling grants and awards (FWO travel grant (deadline 3 months before the conference!), VUB doctoral school, FEBS grants and other, conference-specific, grants such as Protein Society). A successful travel award is also great additions on your CV. We do not expect or encourage group members to pay towards these costs out of pocket, although it might be necessary to pay in advance and get reimbursed through the VUB or VIB financial channels (ask your advisor or a permanent staff member about those). Sufficient time must be given to account for any additional considerations, including visa applications, arranging suitable childcare for families, filling in the conference days into TEO (VUB payroll) or SD-Workx (VIB payroll) to be properly insured while travelling. Each conference attendee is responsible for planning their stay and for arranging travel details (travel and accommodation instructions are often provided by the conference organizers). Early planning can effectively reduce travel and accommodation costs, enabling your lab to allocate more funds to other essential expenses. To further reduce the costs and fully enjoy the networking opportunities of the conference, please also consider booking shared accommodation. However, we recognize that, in some circumstances (e.g. medical condition), a shared accommodation might represent a challenge. You should not feel obliged to justify your accommodation choice to your supervisor.

Public Engagement

How we engage in public engagement initiatives, and how you can get involved

Why do public engagement? Much of the research we do is supported by public funding, whether through government or charitable means. We have a responsibility to engage with this key stakeholder to explain why this funding is important. The Center has a long history of public engagement, and we are extremely fortunate to benefit from generous funding from the Flemish government to enable exciting and innovative science. You can give back to society by explaining the impact of your research to the broader public and by engaging young students, and sharing your passion for science, you can ignite their curiosity and enthusiasm and might encourage them to undertake a scientific career. When you communicate the impact of your research to the broader public, you play a vital role in bridging the gap between complex scientific concepts and the everyday lives of individuals. This helps people understand the tangible benefits of your work and its relevance to society at large. By fostering this understanding, you promote a greater appreciation for the value of scientific research in addressing real-world challenges.

Benefits: Engaging in public engagement brings several benefits to the researcher. It improves our communication skills, teaches us how to distil complex ideas to a general audience; motivates our research through closer connections with those who benefit from our findings; provides inspiration from the public; forms connections between scientists; and enables us to pass on our enthusiasm for science to others.

Our Science Outreach and Social Media teams are dedicated to science communication.

The Science Outreach team strives to ignite enthusiasm for science within the broader public and disseminate our research. To do so, members of the team participate in various activities organized by VUB and VIB, including Dag van de Wetenschap, Biotechdag, I Love Science festival, Theater aan Zee, and more. They present engaging activities centered around DNA and proteins, designed for audiences of all ages.
Over the years they created immersive experiences such as the SBB Escape Room, a Virtual Reality DNA shooter, a chemical garden, all aimed at unravelling the intricacies of how and why we conduct scientific research. In collaboration with Kinderuniversiteit VUB, Wetenschap op Stap from VIB, and TADA Brussels, they have conducted workshops for schools. They are always on the lookout for enthusiastic individuals to join their efforts, even just for a single event—your contribution is more than welcome!

The Social Media team aims to keep the social media channels of the Center up to date. Active on Twitter and Instagram, they tailor the content to the platforms. On Twitter, the focus is on scientific publications, press releases, and important achievements, with the aim of reaching a scientific audience. The Instagram page is crafted to resonate with the general public, demystifying the essence of 'scientific research' in an accessible, light, and fun manner.

Getting involved: To maintain a vibrant representation of the entire Center and ensure a consistent flow of posts, they seek your input. Whether you have recently published a paper, want to share insights about your research with a broader audience, or are organizing an event, please reach out to them. Your contributions will play a crucial role in shaping and enriching our social media presence!
Alternatively, you can also reach out to a member of the VIB public outreach team to discover more about how you can get involved in their projects.

Contributors 2023-2024

Anastassia Vorobieva & Joris Messens with feedback and input from all members of CSB/SBB and VIB HR