

Sumeet Pal Singh | PhD

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ORCID: 0000-0002-5154-3318



Personal Details

Birth Date: August 12, 1985

Nationality: Indian

Family Status: Married

Research Experience

Assistant Professor (Tenured)

2022–Onwards

Institut de Recherche Interdisciplinaire en Biologie Humaine et Moléculaire (IRIBHM)
Université Libre de Bruxelles (ULB)

Brussels, Belgium

Group Members: Three PhD Candidates + One Technician.

Project title: Regenerative and Stress Biology.

Research Group Leader

2019–2022

Institut de Recherche Interdisciplinaire en Biologie Humaine et Moléculaire (IRIBHM)
Université Libre de Bruxelles (ULB)

Brussels, Belgium

Education / Training

Post-Doctoral Fellow

2014–2019

DFG Center for Regenerative Therapies Dresden

Dresden, Germany

Research Advisor: Nikolay Ninov, Ph.D.

Project title: Cellular and Epigenetic Dynamics in β -cell during Development, Regeneration and Diabetes.

Post-Doctoral Fellow

2013–2014

Max Planck Institute of Molecular Cell Biology and Genetics

Dresden, Germany

Research Advisor: Jochen Rink, Ph.D.

Project title: Live Imaging Stem Cell Dynamics during Growth and Regeneration.

PhD

2008–2013

Duke University

Durham, USA

Research Advisor: Kenneth D. Poss, Ph.D.

Thesis Title: Cellular and Molecular Determinants of Zebrafish Fin Osteoblast Regeneration.

B. Tech., Biological Sciences and Bioengineering

2004–2008

Indian Institute of Technology (IIT)

Kanpur, India

Grade: 8.7 / 10

Lab's Vision

The Singh Lab @ IRIBHM, ULB focusses on regenerative and stress biology. We are interested in understanding the ability of organs to recover from injuries and stress. For example, we are able to heal a cut to our finger, even if it happens multiple times. Our blood regenerates after blood donation within a day or two. In ancient Greek mythology, Prometheus was sentenced to having half of his liver eaten by an eagle every day, but the liver would regenerate during the night – highlighting the almost infinite regenerative capacity of the liver. We are fascinated by such robustness in regenerative systems - which are a hallmark of a dynamic biological system.

To understand the robustness of biological systems, we explore two main themes: **plasticity and adaptation**.

For our experimental model, we use Zebrafish, which possess amazing regenerative abilities. It is able to recover from complete loss of bone cells or pancreatic beta-cells. We utilize its super-natural regenerative ability to explore our themes, with the hope that the lessons we learn can be translated to improve outcomes of human injury.

Contribution to Science

1. Cellular plasticity during regeneration

During my doctoral studies, we focused on the cellular source of bone-synthesizing osteoblast cells in the zebrafish fin. We developed a model for depleting the osteoblast population using a cell-specific and inducible ablation strategy. This revealed that the contribution of osteoblasts to bone and fin regeneration was redundant, and that the mesenchymal fibroblasts could contribute in their absence, demonstrating cellular plasticity during regeneration (1a).

As a post-doctoral researcher, we embarked on understanding the plasticity in the pancreatic β -cell regeneration (1b). Zebrafish, can recover from complete β -cell destruction. In contrast, human β -cells do not recover after massive death, which in turn leads to Type 1 or Type 2 diabetes. For this, we carried out single-cell mRNA-Sequencing (scRNASeq) of the endocrine islets after β -cell ablation. This led to an intriguing observation that suggested plasticity within the endocrine population. We documented a new progenitor source for β -cells. Specifically, we observed a sub-population of the pancreatic δ -cells were capable of trans-differentiating into β -cells (1c).

1a. Singh SP, Holdway JE, Poss KD.

Regeneration of amputated zebrafish fin rays from de novo osteoblasts.

Developmental Cell: Apr 17; doi:10.1016/j.devcel.2012.03.006

2012

1b. Singh SP, Janjuha S, Hartmann T, Kayisoglu O, Konantz J, Birke S, Murawala P, Alfar EAA, Murata K, Eugster A, Tsuji N, Morrissey ER, Brand M, Ninov N.

Different developmental histories of beta-cells generate functional and proliferative heterogeneity during islet growth.

Nature Communications: September 22; doi:10.1038/s41467-017-00461-3

2017

1c. Singh SP*, Chawla P*, et al.

*Equal contribution

A single-cell atlas of de novo beta-cell regeneration reveals the contribution of hybrid beta/delta cells to diabetes recovery in zebrafish.

Development: January 28; [doi:10.1242/dev.199853](https://doi.org/10.1242/dev.199853)

2022

2. Adaptation to stress (starvation) response

A major driver of evolutionary selection is the adaptation to starvation as animals in the wild face uncertain food supply. Adaptation to periods of famine shape physiology in a variety of species: fatty liver in migratory birds, high blood sugar in seals and insulin resistance (IR) in hibernating bears. Work from our lab has demonstrated that the zebrafish liver accumulates lipid droplets in response to starvation (2a). Starvation-induced fatty liver, or hepatic steatosis, creates an energy reservoir that allows survival during long-term caloric deprivation. However, the fat accumulation in the liver damages the organ. In a collaborative project, we discovered that Mexican cavefish, a model of starvation resistance, evolved protection from starvation-induced liver damage through reduction of fatty acid uptake regulated by FATP2, a mechanism conserved through 400 million years of animal evolution (2b). We continue to investigate this “natural” mode of liver steatosis to uncover the mechanisms underlying its induction and resolution, and its relationship to liver atrophy. Other metabolic stressors, such as high-fat diet and alcohol both cause fatty liver, medically referred to as Metabolic-associated Fatty Liver (MAFL) and Alcoholic Fatty Liver (AFL), respectively. As steatosis is the first step towards liver disease, we are currently applying our findings to these clinically significant contexts.

- 2a. Pozo Morales M, Garteizgogea I, Perazzolo C, **Singh SP**.
In vivo imaging of calcium dynamics in zebrafish hepatocytes.

Hepatology: March 01; [doi:10.1002/hep.32663](https://doi.org/10.1002/hep.32663)

2023

- 2b. Pozo-Morales M*, Cobham AE*, Centola C, McKinney MC, Liu P, Perazzolo C, Lefort A, Libert F, Bai H, Rohner N[§], **Singh SP[§]**.

*Equal contribution

[§]Co-Corresponding Author*Starvation resistant cavefish reveal conserved mechanisms of starvation-induced hepatic lipotoxicity.***bioRxiv:** January 11; [doi:10.1101/2024.01.10.574986](https://doi.org/10.1101/2024.01.10.574986)

2024

Grants Awarded

Research Credit (PDR) - FNRS

2024

Regulators of cellular plasticity during organ regeneration.

Jaumotte-Demoulin Foundation

2023

Metabolic adaptation to nutritional deprivation.

Research Credit (CDR) - FNRS

2022

Learning from the extreme: Starvation induces non-alcoholic fatty liver in zebrafish, which is resolved by mobilization of endo-lysosomal calcium stores.

Jaumotte-Demoulin Foundation

2021

Metabolic adaptation to nutritional deprivation.

MISU-PROL FNRS Fellow

2021–2022

Regulators of cellular plasticity in endocrine organs.

Jaumotte-Demoulin Foundation Regulators of metabolic cell death.	2020
ULB ERC Support Financial support for reaching second start of the ERC Competition.	2020
MISU FNRS Fellow How multi-tasking segregates homogenous cellular societies.	2019–2021
Deutsche Forschungsgemeinschaft (DFG) Research Fellowship (Declined) How multi-tasking segregates homogenous cellular societies.	2019–2021
EFSD/Lilly Young Investigator Research Award The role of tetraspanin-7, an islet autoantigen, in regulating beta-cell functional heterogeneity	2018–2019
CRTD Postdoctoral Seed Grant Dissecting functional heterogeneity in β -cells using Single-cell RNA-Seq	2016–2017
CRTD Postdoctoral Seed Grant Inducible Cas9/CRISPR for Conditional Gene Knockouts in Vertebrate Regenerative Model Systems	2015–2016

Publications

Preprints

- Pozo-Morales M*, Cobham AE*, Centola C, McKinney MC, Liu P, Perazzolo C, Lefort A, Libert F, Bai H, Rohner N[§], **Singh SP[§]**.
 *Equal contribution
[§]Co-Corresponding Author
Starvation resistant cavefish reveal conserved mechanisms of starvation-induced hepatic lipotoxicity.
bioRxiv: January 11; [doi:10.1101/2024.01.10.574986](https://doi.org/10.1101/2024.01.10.574986) 2024
- Gilglioni EH, Li A, Wijckmans WS-P, ShenT-K, Perez-Chavez I, Hovhannisyan G, Lisjak M, Negueruela J, Vandenbempt V, Bauza-Martinez J, Herranz JM, Ezerina D, Demine S, Feng Z, Vignane T, Otero-Sanchez L, Lambertucci F, Prasnicka A, Deviere J, Hay DC, Encinar JAN, **Singh SP**, Messens J, Filipovic MR, Sharpe HJ, Trepo E, Wu W, Gurzov EN.
Protein tyrosine phosphatase receptor kappa regulates glycolysis and de novo lipogenesis to promote hepatocyte metabolic reprogramming in obesity.
bioRxiv: December 01; [doi:10.1101/2023.12.01.569004](https://doi.org/10.1101/2023.12.01.569004) 2023
- Garteizgogea I, **Singh SP**.
A zebrafish knock-in reporter line for the Foxo1a transcription factor.
bioRxiv: July 17; [doi:10.1101/2023.07.17.548093](https://doi.org/10.1101/2023.07.17.548093) 2023
- Ibneeva L, **Singh SP**, Sinha A, Eski SE, Wehner R, Rupp L, Perez-Valencia JA, Gerbaulet A, Reinhardt S, Wobus M, Bonin M, Sancho J, Lund FE, Dahl A, Schmitz M, Bornhaeuser M, Chavakis T, Wielockx B, Grinenko T.
CD38 promotes hematopoietic stem cell dormancy via c-Fos.

bioRxiv: February 08; [doi:10.1101/2023.02.08.527614](https://doi.org/10.1101/2023.02.08.527614) 2023

5. De Faria Da Fonseca B, Barbee C, Romitti M, Eski S E, Gillotay P, Monteyne D, Perez-Morga D, Refetoff S, **Singh SP**, Costagliola S.

Foxe1 orchestrates thyroid and lung cell lineage divergence in mouse stem cell-derived organoids.

bioRxiv: May 16; [doi:10.1101/2022.05.16.492074](https://doi.org/10.1101/2022.05.16.492074) 2022

6. Gillotay P, Romitti M, Dassy B, Haerlingen B, Parakkal MS, De Faria Da Fonseca B, Panos Z G, **Singh SP**, Gerasimos S, Costagliola S.

Nrf2 promotes thyroid development and hormone synthesis.

bioRxiv: March 01; [doi:10.1101/2022.02.27.482168](https://doi.org/10.1101/2022.02.27.482168) 2022

Original Research Articles

7. Vandembemt V, Eski SE, Brahma MK, Li A, Negueruela J, Bruggeman Y, Demine S, Xiao P, Cardozo AK, Baeyens N, Martelotto LG, **Singh SP**, Mariño E, Gysemans C, Gurzov EN.

HAMSAB diet ameliorates dysfunctional signaling in pancreatic islets in autoimmune diabetes.

iScience: January 19; [doi:10.1016/j.isci.2023.108694](https://doi.org/10.1016/j.isci.2023.108694) 2024

8. Yu Q, Walters HE, Pasquini G, **Singh SP**, León-Periñán D, Petzold A, Kesavan P, Subiran C, Garteizgogea I, Knapp D, Wagner A, Bernardos A, Alfonso M, Nadar G, Dahl A, Buskamp V, Martínez-Máñez R, Yun MH.

Cellular senescence modulates progenitor cell expansion during axolotl limb regeneration.

Developmental Cell: October 24; [doi:10.1016/j.devcel.2023.09.009](https://doi.org/10.1016/j.devcel.2023.09.009) 2023

9. Valiente-Gabioud A, Garteizgogea I, Idziak A, Fabritius A, Angibaud J, Basquin J, Nägerl UV, **Singh SP**, Griesbeck O.

Fluorescent Sensors for Imaging Interstitial Calcium.

Nature Communications: October 05; [doi:10.1038/s41467-023-41928-w](https://doi.org/10.1038/s41467-023-41928-w) 2023

10. Pozo Morales M, Garteizgogea I, Perazzolo C, **Singh SP**.

In vivo imaging of calcium dynamics in zebrafish hepatocytes.

Hepatology: March 01; [doi:10.1002/hep.32663](https://doi.org/10.1002/hep.32663) 2023

11. Romitti M, Tourneur A, De Faria Da Fonseca B, Doumont G, Gillotay P, Liao X-H, Eski S, E, Van Simaey G, Chomette L, Lasolle H, Monestier O, Figini Kasprzyk D, Detours V, **Singh SP**, Goldman S, Refetoff S, Costagliola S.

Transplantable human thyroid organoids generated from embryonic stem cells to rescue hypothyroidism.

Nature Communications: November 17; [doi:10.1038/s41467-022-34776-7](https://doi.org/10.1038/s41467-022-34776-7) 2022

12. McLaughlin K, Acreman S, Nawaz S, Cutteridge J, Clark A, Knudsen JG, Denwood G, Spigelman AF, Manning Fox JE, **Singh SP**, MacDonald PE, Hastoy B, Zhang Q.

Loss of tetraspanin-7 expression reduces pancreatic β -cell exocytosis Ca^{2+} sensitivity but has limited effect on systemic metabolism.

Diabetic Medicine: October 20; [doi:10.1111/dme.14984](https://doi.org/10.1111/dme.14984) 2022

13. Xiao P, Takiishi T, Moretti Violato N, Licata G, Dotta F, Sebastiani G, Marselli L, **Singh SP**, Sze M, Van Loo G, Dejardin E, Gurzov EN, Cardozo AK.

NF-kappaB-inducing kinase (NIK) is activated in pancreatic beta-cells but does not contribute to the development of diabetes.

Cell Death & Disease: May 19; [doi:10.1038/s41419-022-04931-5](https://doi.org/10.1038/s41419-022-04931-5) 2022

14. Nahaboo W, Eski SE, Despin-Guitard E, Vermeersch M, Saykali B, Monteyne D, Gabriele S, Magin TM, Schwarz N, Leube RE, Zwijsen A, Perez-Morga D, **Singh SP**, Migeotte I.

Keratin filaments mediate the expansion of extra-embryonic membranes in the post-gastrulation mouse embryo.

EMBO Journal: March 10; [doi:10.15252/emj.2021108747](https://doi.org/10.15252/emj.2021108747) 2022

15. **Singh SP***, Chawla P*, Hnatiuk A, Kamel M, Silva LD, Spanjard B, Eski SE, Janjuha S, Olivares P, Kayisoglu O, Rost F, Blasche J, Krankel A, Petzold A, Kurth T, Reinhardt S, Junker JP, Ninov N.

*Equal contribution

A single-cell atlas of de novo beta-cell regeneration reveals the contribution of hybrid beta/delta cells to diabetes recovery in zebrafish.

Development: January 28; [doi:10.1242/dev.199853](https://doi.org/10.1242/dev.199853) 2022

16. Elvira B, Vandenbempt V, Bauza-Martinez J, Crutzen R, Negueruela J, Ibrahim H, Winder M, Brahma M, Vekeriotaitte B, Martens P-J, **Singh SP**, Rossello F, Lybaert P, Otonkoski T, Gysemans C, Wu W, Gurzov E.

PTPN2 regulates the interferon signalling and endoplasmic reticulum stress response in pancreatic beta-cells in autoimmune diabetes.

Diabetes: January 19; [doi:10.2337/db21-0443](https://doi.org/10.2337/db21-0443) 2022

17. Romitti M^{§*}, Eski SE*, Fonseca BF, **Singh SP[§]**, Costagliola S[§].

*Equal contribution

[§]Co-Corresponding Author

Single-cell trajectory inference guided enhancement of thyroid maturation in vitro using TGF-beta inhibition.

Frontiers in Endocrinology: May 31; [doi:10.3389/fendo.2021.657195](https://doi.org/10.3389/fendo.2021.657195) 2021

18. Pronobis MI, Zheng S, **Singh SP**, Goldman JA, Poss KD.

In vivo proximity labeling identifies cardiomyocyte protein networks during zebrafish heart regeneration.

eLife: March 25; [doi:10.7554/eLife.66079](https://doi.org/10.7554/eLife.66079) 2021

19. Gillotay P, Shankar MP, Haerlingen B, Eski SE, Pozo-Morales M, Garteizgogea I, Reinhardt S, Kraenkel A, Blasche J, Petzold A, Ninov N, Kesavan G, Lange C, Brand M, Detours V,

Costagliola S[§], **Singh SP[§]**.

[§]Co-Corresponding Author

Single-cell transcriptome analysis reveals thyrocyte diversity in the zebrafish thyroid gland.

EMBO Reports: November 06; [doi:10.15252/embr.202050612](https://doi.org/10.15252/embr.202050612)

2020

Featured as Cover Image

20. Mathiah N, Despin-Guitard E, Stower M, Nahano W, Eski SE, **Singh SP**, Srinivas S, Migeotte I
Asymmetry in the frequency and position of mitosis in the mouse embryo epiblast at gastrulation.
EMBO Reports: October 05; [doi:10.15252/embr.202050944](https://doi.org/10.15252/embr.202050944) 2020
21. Eski SE, Dubois C, **Singh SP[§]**.
[§]Corresponding Author
Nuclei Isolation from Whole Tissue using a Detergent and Enzyme-Free Method.
JoVE: June 24; [doi:10.3791/61471](https://doi.org/10.3791/61471) 2020
22. Chen LS, **Singh SP**, Mueller G, Bornstein SR, Kanczkowski W.
Transcriptional analysis of sepsis-induced activation and damage of the adrenal microvascular cells.
Frontiers in Endocrinology: January 22; [doi:10.3389/fendo.2019.00944](https://doi.org/10.3389/fendo.2019.00944) 2020
23. Salem V, Silva LD, Suba K, Georgiadou E, Gharavy SNM, Akhtar N, Martin-Alonso A, Gaboriau DCA, Rothery SM, Stylianides T, Carrat G, Pullen TJ, **Singh SP**, Hodson DJ, Leclerc I, Shapiro AMJ, Marchetti P, Briant LJB, Distaso W, Ninov N, Rutter GA.
Leader beta-cells coordinate Ca²⁺ dynamics across pancreatic islets in vivo.
Nature Metabolism: June 14; [doi:10.1038/s42255-019-0075-2](https://doi.org/10.1038/s42255-019-0075-2) 2019
24. Chen LS, **Singh SP**, Schuster M, Grinenko T, Bornstein SR, Kanczkowski W.
RNA-seq analysis of LPS-induced transcriptional changes and its possible implications for the adrenal gland dysregulation during sepsis.
J. Steroid Biochem. Mol. Biol.: November 29; [doi:10.1016/j.jsbmb.2019.04.009](https://doi.org/10.1016/j.jsbmb.2019.04.009) 2019
25. **Singh SP[§]**, Janjuha S, Chaudhuri S, Reinhardt S, Dietz S, Eugster A, Bilgin H, Korkmaz S, Zararsiz G, Ninov N, Reid JE.
[§]Corresponding Author
Machine learning based classification of cells into chronological stages using single-cell transcriptomics.
Scientific Reports: November 21; [doi:10.1038/s41598-018-35218-5](https://doi.org/10.1038/s41598-018-35218-5) 2018
26. Cox BD, Simone AD, Tornini VA, **Singh SP**, Talia SD, Poss KD.
In Toto imaging of dynamic osteoblast behaviors in regenerating skeletal bone.
Current Biology: November 29; [doi:10.1016/j.cub.2018.10.052](https://doi.org/10.1016/j.cub.2018.10.052) 2018

27. Janjuha S*, **Singh SP***, Ninov N.
*Equal contribution
Analysis of Beta-cell Function Using Single-cell Resolution Calcium Imaging in Zebrafish Islets.
JoVE: July 03; [doi:10.3791/57851](https://doi.org/10.3791/57851) 2018
28. Janjuha S*, **Singh SP***, Tsakmaki A, Gharavy SNM, Murawala P, Konantz J, Birke S, Hodson DJ, Rutter GA, Bewick GA, Ninov N.
*Equal contribution
Age-related islet inflammation marks the proliferative decline of pancreatic beta-cells in zebrafish.
eLife: April 06; [doi:10.7554/eLife.32965](https://doi.org/10.7554/eLife.32965) 2018
29. **Singh SP**, Janjuha S, Hartmann T, Kayisoglu O, Konantz J, Birke S, Murawala P, Alfar EAA, Murata K, Eugster A, Tsuji N, Morrissey ER, Brand M, Ninov N.
Different developmental histories of beta-cells generate functional and proliferative heterogeneity during islet growth.
Nature Communications: September 22; [doi:10.1038/s41467-017-00461-3](https://doi.org/10.1038/s41467-017-00461-3) 2017
30. Fei JF, Knapp D, Schuez M, Murawala P, Zou Y, **Singh SP**, Drechsel D, Tanaka EM.
Tissue and time-directed electroporation of CAS9 protein-gRNA complexes in vivo yields efficient multigene knockout for studying gene function in regeneration.
npj Regenerative Medicine: June 1; [doi:10.1038/npjregenmed.2016.2](https://doi.org/10.1038/npjregenmed.2016.2) 2016
31. **Singh SP**, Holdway JE, Poss KD.
Regeneration of amputated zebrafish fin rays from de novo osteoblasts.
Developmental Cell: Apr 17; [doi:10.1016/j.devcel.2012.03.006](https://doi.org/10.1016/j.devcel.2012.03.006) 2012
32. Wang JH, Panáková D, Kikuchi K, Holdway JE, Gemberling M, Burriss JS, **Singh SP**, Dickson AL, Lin YF, Sabeh MK, Werdich AA, Yelon D, Macrae CA, Poss KD.
The regenerative capacity of zebrafish reverses cardiac failure caused by genetic cardiomyocyte depletion.
Development: Aug 15; [doi:10.1242/dev.068601](https://doi.org/10.1242/dev.068601) 2011

Review Article

33. **Singh SP**, Ninov N.
The triumvirate of beta-cell regeneration: Solutions and bottlenecks to curing diabetes.
Int. J. Dev. Biol.: June 28; [doi: 10.1387/ijdb.180067nn](https://doi.org/10.1387/ijdb.180067nn) 2018

Book Chapter

34. **Singh SP**, Ninov N.
Multicolor labeling and tracing of pancreatic beta-cell proliferation in zebrafish.
Animal Models of Diabetes: Methods and Protocols

Editorial

35. Costagliola S, Singh SP.

Emerging Technologies in Thyroid Biology: Pushing the Frontiers of Thyroid Research.

Molecular and Cellular Endocrinology.: May 01; [doi:10.1016/j.mce.2023.111912](https://doi.org/10.1016/j.mce.2023.111912)

2023

Conference Talks / Seminars

Seminar: Institut de Recherche Expérimentale et Clinique (IREC)	Woluwé, Belgium
Cellular plasticity in liver regeneration	2023
Seminar: Indian Institute of Technology (IIT), Kanpur	Kanpur, India
Mechanisms of starvation resistance	2023
Seminar: Indian Institute of Technology (IIT), Delhi	New Delhi, India
Mechanisms of starvation resistance	2023
Seminar: Biology Department, KU Leuven	Leuven, Belgium
Resolution of hepatic steatosis in zebrafish	2022
Belgium Society for Cell and Developmental Biology	Brussels, Belgium
Resolution of hepatic steatosis in zebrafish	2022
Helmholtz Zentrum München	Webinar
Preprint publishing and evolving the peer-review process	2022
6th European Zebrafish PI Meeting	Dresden, Germany
Speaker: Single-cell interactome	
Chair: Metabolism and Endocrinology	2022
43rd Annual Meeting of the European Thyroid Association	Milano, Italy*
Zebrafish as a model of human thyroid disorders	2021
Seminar: University of Wisconsin–Madison	Madison, USA*
Single-cell endocrinology	2021
EMBL-EBI Training with Europe PMC	Webinar
Preprints 101 for authors	2021
3rd Italian Zebrafish Meeting (ZFIM)	Napoli, Italy*
Thyroid Macrophage Interaction	2021
Seminar: New York University Abu Dhabi	Abu Dhabi, UAE*
Single-cell endocrinology	2021
Meeting Co-Host: Belgian Society of Physiology and Pharmacology	Online*
Spring Meeting	2021
26th Japanese Medaka and Zebrafish Meeting	Chiba, Japan*
Thyroid Morphogenesis	2020
4th Challenges in Computational Biology meeting	Mainz, Germany*
Single Cell Data Analysis	2020
*In-person meeting moved online due to COVID19	
Interdisciplinary Scientific Seminars - ULB	Brussels, Belgium
Cooperative Behaviour	2020
Applied Bioinformatics in Life Sciences (3rd edition)	Leuven, Belgium
Machine Learning in Aging	2020

2nd International Biostatistics Congress Bioinformatics	Antalya, Turkey 2017
11th CRTD Summer Conference Regenerative Medicine	Dresden, Germany 2017
EMBO Conference The molecular and cellular basis of regeneration and tissue repair	Paestum (Salerno), Italy 2016
MPI-CBG 15th Anniversary Symposium Development and Regeneration	Dresden, Germany 2016
10th CRTD Summer Conference Regenerative Medicine	Dresden, Germany 2016
Helmholtz Thementag on Diabetes Helmholtz Zentrum Diabetes Science day	München, Germany 2017
9th CRTD Summer Conference Regenerative Medicine	Dresden, Germany 2015

Awards and Achievements

10x Genomics Grant Program: Best Abstract	2020
Best Poster Award: CRTD Day	2019
Deutsche Zentrum für Diabetesforschung (DZD) Award: Conference Presentation	2016
Best Talk Award: Genetics and Genomics Departmental Retreat	2012
Best Talk Award: Cell Biology Departmental Retreat	2012
Summer Internship Award: Jawaharlal Nehru Centre for Advanced Scientific Research	2007
Baljit and Nirmal Dhindsa Scholarship: Highest Grades (Biological Department)	2005
Academic Excellence Award: Freshman Student	2004

Memberships in International Societies

International Society for Regenerative Biology (ISRB)
European Association for the Study of the Liver (EASL)

Pedagogy

Instructor: Stem cells, Developmental genetics 5 credit Master course, ULB	2023–Onwards Brussels, Belgium
Instructor: Embryology, organogenesis and genetics 5 credit Bachelor course, ULB	2023–Onwards Brussels, Belgium
Instructor: Developmental and evolutionary biology 5 credit Bachelor course, ULB	2023–Onwards Brussels, Belgium
Co-Instructor: Scientific Communication 5 credit Bachelor course, ULB	2022–Onwards Brussels, Belgium
Instructor: Hands-on Introduction to RNA-Seq CIVIS (European CIVIC University), ULB	2021 Brussels, Belgium
Organizer: School Workshop International School of Brussels (ISB)	2020–2021 Brussels, Belgium
Instructor: Online Courses R and Bioinformatics	2020 YouTube

Mentor: English Language
Freedom English Academy (FEA)

2018–2019
via Skype, India

Volunteer: School Student Lab Practical Course
Center for Regenerative Therapies Dresden

2018
Dresden, Germany

Teaching Assistant (TA): Advanced Topics - Genetics/Genomics
Duke University

2009
Durham, USA

Scientific Outreach

ASAPBio Fellow

2021

Raise awareness of preprints and encourage their productive use in the life sciences

Pint of Science (Belgium)

2020

Animal Models in Science

Science Slam (Deutsch)

2017

Vorhersage des Zellulären Alters durch Künstliche Intelligenz

Journal Coverage Podcast

2015–2019

Audio interviews of scientific authors with recent, important publications

Diversity Promotion

Member - Diversity, Equity, and Inclusion (DEI) committee
International Zebrafish Society (IZFS)

2020–2022