



# Biomedicine and Biotechnology DIS Study Abroad in Scandinavia



#### Overview

<u>DIS -Study Abroad in Scandinavia</u> offers students in learning state-of-the art biomedical research which drives the creation of novel diagnostics and therapeutics for clinical use. Students engage in unique experiences where they learn and witness how laboratory and clinical-based research leads to implementing innovative solutions to meet patient needs.

During the spring or fall, students enroll in one core course (with course-integrated study tours within Sweden, Denmark, and Norway) and three or four electives. Summer students can choose to take 3 to 9 credits over 3 to 9 weeks and can choose to stay in either Copenhagen or Stockholm, or mix-and-match locations.

# Why Study Biomedicine and Biotechnology in Scandinavia?

With top-quality academic institutions and research facilities, strategic funding for the development of biomedical technological solutions, and medtech and biotech innovation hubs, Scandinavia is renowned for using research principles to solve medical problems.

#### **Core Courses**

<u>Medical Biotechnology and Drug Development</u> (Copenhagen), Fall/Spring, 3 credits Prerequisite(s): One year each of biology and chemistry at university level.

- Week-Long Study Tour: Lisbon-Porto (Fall/Spring) or London (Spring) or Edinburgh (Fall)
- Core Course Week Study Tour: Denmark

Biomedical Engineering in Scandinavia (Stockholm), Fall/Spring, 3 credits,

Prerequisites: Two courses in math, plus a total of five courses within engineering, basic science (biology, chemistry, physics), and/or computer science, all at university level. At least one of these courses should be an engineering course.

- Week-Long Study Tour: Denmark-Norway
- Short Study Tour: Sweden

# Psychopharmacology: Substances and the Brain (Copenhagen), Fall/Spring, 3 credits

Prerequisite(s): One year each of biology and chemistry at university level.

- Week-Long Study Tour: Frankfurt-Heidelberg or Munich
- Core Course Week Study Tour: Southern Sweden or Denmark

# **Semester Courses**

- Biomedical Engineering in Scandinavia (Stockholm)
- Engineering Biomaterials (Stockholm)
- Epigenetics and the Impact on Health and Disease (Copenhagen)
- <u>Genomics in Clinical Practice</u> (Copenhagen)
- Gut Reaction: How Human Microbes Shape Our Lives (Copenhagen)
- <u>Immunology</u> (Copenhagen)
- Immunology and Infectious Diseases (Copenhagen)
- Medical Diagnostics (Copenhagen)
- Medical Simulation Lab (Stockholm), Medical Simulation Lab (Copenhagen)
- <u>Neurodegenerative Diseases</u> (Stockholm)
- Neurological Disorders and Diseases (Copenhagen)
- Neuroscience of Fear and Anxiety (Copenhagen)
- Philosophy of Technology and Human Values (Stockholm)
- Precision Medicine: Tailored Treatment in Clinical Practice (Stockholm)
- Psychopharmacology: Substances and the Brain (Copenhagen)
- Research Assistant: Biochemistry-Biophysics of Ion Channels (Stockholm)
- Research Assistant: Visualizing Protein Distribution in the Brain (Stockholm)
- Statistics (Stockholm)

#### **Summer Courses**

#### Session 1 (May 21 - June 12, 2024)

- Human Health and Disease: A Clinical Approach (Copenhagen)
- Medical Diagnostics (Stockholm)
- Statistics (Stockholm)

# Session 2 (June 16 - July 5, 2024)

- Human Health and Disease: A Clinical Approach (Copenhagen)
- Medical Biotechnology and Drug Development (Copenhagen)
- Precision Medicine: Tailored Treatment in Clinical Practice (Stockholm)

# Session 3 (July 8 - July 27, 2024)

- Molecular and Cellular Neuroscience (Stockholm)
- Sports Medicine: Performance and Fatigue (Copenhagen)

# Labs, Research, & Practicums Session (May 21 - July 5, 2024)

- Biomedical Lab (Stockholm)
- Microbrains Lab: Modeling Neurodegeneration (Copenhagen)
- Research Assistant Neurometabolism in Neurodegenerative Diseases (Copenhagen)

# **Program Directors**



# **Susana Dietrich**

Ph.D. (Biomedical Sciences, University of Porto, Portugal, 2007).

- M.S. (Biotechnology, De Monfort University, UK, and Karolinska Institutet, Sweden, 1998).
- Licenciatura (Microbiology, Portuguese Catholic University, Portugal, 1997).

Post-Doctorate positions in immunology and neuroimmunology, University of Lund, Sweden and University of Copenhagen, Denmark. With DIS since 2011.



#### **Louise Bagger Iversen**

M.S. and B.S. (Public Health, University of Copenhagen, 2011/2007).

Academic officer in the Planning Department, Quality and Development, Region Sjælland, 2011-2014. With DIS since 2014.

# **Faculty**

#### Jesper T. Andreasen (Copenhagen)

Ph.D. (Psychopharmacology, University of Copenhagen, 2009).

• M.Sc. (Psychopharmacology, University of Copenhagen, 2004).

Post-doctoral fellow at the Department of Drug Design and Pharmacology, Faculty of Health and Medical Sciences, University of Copenhagen. With DIS since 2012.

#### Zara Bond (Copenhagen)

M.D. (University of Southern Denmark).

With DIS since 2023.

#### Adam Darwich (Stockholm)

Ph.D. in Pharmaceutical Sciences, University of Manchester, United Kingdom (2014).

 Assistant Professor in Health Systems Engineering, Department of Biomedical Engineering and Health Systems, KTH (Royal Institute of Technology), Stockholm, Sweden.

Research focus on modelling and simulation of systems and processes related to healthcare, health services, pharmaceutical development, and precision dosing. With DIS since 2021.

# Isabel Engel (Copenhagen)

M.D. (University of Copenhagen, 2017).

• Junior resident in General Medicine, at a clinic in Rødovre.

Previous experience in Emergency Medicine, with employment for 2 years. Former employment as a research assistant at the Danish Headache-center, Department of Neurology, Rigshospitalet Glostrup. Responsible for the Emergency Medicine Course at CAMES, Herlev. Previous Course Assistant for Human health & Disease. With DIS since 2016.

#### Jeanette Erbo Wern (Copenhagen)

Postdoc (Inst. of International Health, Immunology and Microbiology, University of Copenhagen, Denmark, 2006-2009).

- Ph.D. (Immunology, Inst. Of International Health, Immunology and Microbiology, University of Copenhagen, 2005).
- M.Sc. (Inst. Of International Health, Immunology and Microbiology, University of Copenhagen, 2001).

Senior Scientist, Immune Targeting Group, Bioneer, Copenhagen, Denmark, 2010-2013. Senior Scientist, Dept. of Infectious Disease Immunology, Statens Serum Institute, Copenhagen, Denmark, 2013-2016. With DIS since 2016.

#### Andreas Fenger (Copenhagen)

M.D. (University of Copenhagen, 2016).

Previous resident in Urology, having spent Previous experience in with 14 months residency at Dept of General Surgery Køge University Hospital. Former employment as a clinical research assistant at the Centre for Perioperative Optimization, Dept. of Surgery Herlev Hospital. Cocreator of the Emergency Medicine Course at CAMES. Currently with 5 years experience in Glsurgery and responsible of the Surgical Course. With DIS since 2015.

# Kristine Freude (Copenhagen)

PhD at Max Planck Institute for Molecular Genetics and Free University, Berlin, Germany in Human Genetics (2005).

Postdoctoral Research Fellow at UC Irvine, CA, USA (2005-2011) Postdoctoral Researcher (2012-2014) University Copenhagen. MSc at Robert Koch Institute and Free University, Berlin, Germany, in 2001 working with Mycobacteria. Assistant Professor (2014-2015) University Copenhagen. Associate Professor (2015-present) University Copenhagen. With DIS since 2016.

#### Reshmi Ghosh (Stockholm)

Certification in Child Psychology, New Skills Academy UK, 2020.

P.G Diploma Patents Law, NALSAR University of Law, 2010. Bachelor of Technology-Biotechnology, Amity University, 2007. Market Analyst and Business Development Manager at BioXcel Corporation, 2007-2009. Senior Sales Executive Life Science at Marcus Evans Scandinavia Limited, 2010-2013. Teacher at Internationella Engelska Skolan, 2015-2021. With DIS since 2023.

# **Christopher Grigsby** (Stockholm)

Ph.D. Biomedical Engineering, Duke University, USA (2014).

Postdoctoral Fellow and Researcher, Division of Medical Systems Bioengineering, Karolinska Institutet (2016-present). Postdoctoral Fellow, Columbia University, New York, USA (2015-2016). Staff Research Associate, University California San Francisco, San Francisco, USA (2005-2007). B.S. Bioengineering, UC Berkeley, USA (2005). With DIS since 2021.

#### Bettina Hornbøll Borch (Copenhagen)

Ph.D. (Neuroscience, University of Copenhagen, 2017).

- M.Sc. (Neurobiology, University of Copenhagen, 2006).
- B.A. (Biology, University of Copenhagen, 2004).

Founder of CogniCation; cognitive communication. Has been conducting neuroscience research for approx. 10 years, investigating emotion processing in the brain using imaging. With DIS since 2012.

#### Rebecca (Reba) Howard (Stockholm)

Ph.D. completed bachelors and doctoral degrees in Chemistry and Chemical Biology from Pomona College and the University of California, San Francisco

NIH-NIAAA post-doctoral fellowship at The University of Texas at Austin.

Previously Assistant Professor of Biochemistry at Skidmore College. She has managed a team conducting biochemistry and electrophysiology experiments as well as molecular simulations to investigate the structure and function of ion channels at the Science for Life Laboratory in Stockholm since 2016. Howard's recent work includes first-author publications in PNAS, Nature Communications, Cell Reports, etc., and invited talks at the Biophysical Society, International Society for Biomedical Research on Alcoholism, TEDx, and other institutions. With DIS Stockholm since 2018.

# Samir Jawad (Copenhagen)

M.D. (University of Southern Denmark, 2015). Certified Radiologist, 2021.

With DIS since 2023.

# **Ulrik Kristoffer Stoltze** (Copenhagen)

M.D. (University of Copenhagen, 2017).

• Phd-student at The Pediatrics Oncology Lab (Bonkolab, 2019-23), leader of a clinic for childhood cancer surveillance (2021-) and affiliated scientist at Broad Institute of MIT and Harvard (2023-).

Former Clinical Genetics resident (Rigshospitalet, 2018-19), General Practice resident (Søborg, 2018), Surgery resident (Herlev Hospital, 2017). POST-fellow at St. Jude Children's Research Hospital (Memphis, 2016). Active in Genomics research since 2015 with several publications in genetics and bioethics with a focus on childhood cancer. He is conducting one of Denmark's largest genomics studies offering whole-genome sequencing to any cancer patient under 18 years old. Teaching at DIS since 2017.

#### Natalia Landázuri Sáenz (Stockholm)

Ph.D. Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, USA (2005).

- Post-doctoral fellow, Emory University, Atlanta, GA, USA.
- Associate Professor Biomedicine, Karolinska Institutet, Stockholm, Sweden. Fulbright scholar (1999-2001).

Research in genetic engineering, regenerative medicine, cardiovascular disease, and cancer. Has created, designed, implemented and evaluated courses at university level. Acted as Pedagogical Advisor, Development and Regeneration Doctoral Program, Karolinska Institutet. Has participated in national and international committees to evaluate and promote scientific and academic advancements. With DIS since 2017.

# Chenhong Lin (Stockholm)

Ph.D., Medical Science, Karolinska Institutet, 2021.

With DIS since 2022.

# Thor Linnet (Copenhagen)

MD (University of Copenhagen, 2021).

Pre-graduate and post-graduate experience with clinical neurology as well as neuroscience. Currently employed at Department of Neurology, Rigshospitalet Glostrup and in Department of Neuroscience, University of Copenhagen. With DIS since 2019.

#### Philip Little (Stockholm)

Ph.D (doctor of medicine), Karolinska Institutet Stockholm, 2020

Medical Doctor, Karolinska Institutet Stockholm, 2016.

Resident in Medical Radiology, Karolinska University Hospital, 2020-, PhD student, Karolinska Institutet, 2013-2020. Medical Internship, Region Stockholm (previously SLL), 2016-2019. MD at Beroendeakuten Stockholm, Region Stockholm, 2014 - 2023 (not full time). With DIS since 2023.

# Lise Lode (Copenhagen)

M.D. (University of Southern Denmark, 2017).

- Third year resident in Abdominal Surgery at Department of Gastrointestinal Surgery, Hvidovre Hospital.
- First two years of residency at Department of Gastrointestinal Surgery, Herley Hospital.

Previous experience in surgery with 6 months residency at Zealand University Hospital, Køge, Department of Surgery. Junior doctor at Department of Urology and Department of Internal Medicin, Herlev Hospital. Educational Coordinator for resident doctors at Dept. of Gastrointestinal Surgery, Hvidovre Hospital. Board member of YDK (Yngre Danske Kirurger) since 2021. With DIS since 2022.

#### John Madas (Stockholm)

MD (University of Crete 2016).

Research Assistant at the Center for Molecular Medicine (Solna University Hospital, Karolinska Institutet). With DIS since 2017.

# Jan Mulder (Stockholm)

PhD in molecular neurobiology (Rijksuniversiteit Groningen, 2005).

• MSc in biology (Rijksuniversiteit Groningen, 2000).

Senior researcher and group leader at Science for Life laboratory, department of Neuroscience, Karolinska Institute since 2010. Group leader of the brain profiling efforts within the Human Protein Atlas project since 2010. Research in identifying the cellular location of proteins linked to brain function and disease. With DIS since 2017.

#### María de la Paz Celorio (Stockholm)

Ph.D., University of California, Davis, USA (2008).

- Postdoctoral researcher at Max Planck Institute of Chemical Ecology, Jena, Germany (2008-2010), and at Stockholm University, Sweden.
- Researcher and Research Analyst at Stockholm University.

Has contributed to the understanding of gene-expression plasticity in butterflies and genetic differentiation of populations of wild fish using genome-wide data. Has taught courses and led practical laboratories on statistics, biotechnology, and population genetics for American and Swedish students. With DIS since 2021.

#### Paulina Mendoza (Stockholm)

M.D. (La Salle University, Mexico City, 2019). M. Sc. Nutrition Science (Karolinska Universitet, 2021).

Previous employment at the Military Central Hospital in Mexico City (2019-2020). With DIS since 2021.

#### Nicholas Mitsios (Stockholm)

PhD in Molecular Biology of Ischemic Stroke (Manchester, 2005).

• BSc in Molecular Biology (Liverpool, 1998).

Currently a researcher at the Department of Neuroscience, Karolinska Institute and the Brain Profiling sub-unit of the Human Protein Atlas (HPA) project since 2011. Research focuses on the central nervous systems of mammals, with an emphasis on the identification of proteins involved in brain normal development and pathophysiology. With DIS since 2020.

# Alessandro Pellegrini (Copenhagen)

Master's Degree, Sciences and Techniques of Football Athletic Preparation, Università di Pisa (2021).

- Master's Degree, Human Posture, Sapienza Università di Roma (2019). Master's Degree, Sports Science for Prevention and Rehabilitation, University of Rome (2017).
- Bachelor's Degree, Sports Science, University of Rome (2015).

Research Assistant, Mobilize Project Intern, University of Southern Denmark (2020). Assistant Youth Academy, Italian Football Federation (2019-2020). Physical Education Teacher Primary School, Italian National Olympic Committee (2018-2020). With DIS since 2022.

# **Andrea Pohly Thorn** (Copenhagen)

M.D. (University of Copenhagen, 2016).

PhD student at the Department of Orthopedic surgery, Rigshospitalet (2021). M.D Department of Orthopedic surgery Herlev/Gentofte Hospital (2019-2021). M.D Department of Orthopedic surgery Nordsjællands Hospital (2017-2019). M.D General medicin at Vik legekontor, Vik municipality Norway (2017). Intern, Fælles Akut Afdeling, Aarhus universitet hospital – and general medicine at Ebeltoft Lægehus (2016-2017). Course Assistant with DIS (2011-2015). With DIS since 2011.

# Elisa Skovgaard Jensen (Copenhagen)

M.D. (University of Copenhagen, 2012).

PhD student at the Oto-Rhino-Laryngology Department at Nordsjællands Hospital, Hillerød. DIS Clinical Instructor for Human Health & Disease. With DIS since 2017.

# Filip Søskov Davidovski (Copenhagen)

Cand.med, University of Copenhagen, 2022.

Medical Doctor, Ph.d. student at Department of Cardiology - Herlev and Gentofte Hospital, 2022-present. With DIS since 2017.

#### Georgios Sotiriou (Stockholm)

Associate Professor in Biomaterial Science, Karolinska Institutet, Stockholm, Sweden (2020-present).

Ph.D., Mechanical and Process Engineering, ETH Zurich, Switzerland (2011). Postdoctoral Researcher, Center for nanotechnology and nanotoxicology, Harvard University, USA (2013-2015). Research focus on nanoscale functional materials and devices for biomedical applications.

#### Julius Tetans Held (Copenhagen)

M.D (University of Copenhagen, 2020).

KBU at the Orthopaedic Department, Hvidovre Hospital 2020-2021. Introduktionsstilling at Orthopaedic Department, Hillerød Hospital 2021-2022. Currently PhD student at the Orthopaedic Department at Rigshospitalet, Copenhagen.

#### Jack Xu (Copenhagen)

Radiology Resident, Department of Radiology, Gentofte Hospital.

PhD fellow, Department of Diagnostic Radiology, Rigshospitalet (2020-2023). M.D. (University of Copenhagen, 2018). Junior doctor union representative, Hvidovre & Amager Hospital (2019-2020). Junior Doctor - Department of Emergency medicine, Holbæk Hospital (2018-2019).

Student researcher at the Department of Clinical Genetics, Rigshospitalet. Board member, Synapse - Life Science Connect. Nurse Assistant, FADL (The Association of Danish Medical Students). Mentor for International students, University of Copenhagen. Course Assistant for Human Health & Disease. With DIS since 2017.

# Kasper Yde Jensen (Copenhagen)

Ph.D (Faculty of Health and Medical Sciences, University of Copenhagen, Present). MSc (Sport and Health Sciences, University of Southern Denmark, 2016). BSc (Sport and Health Sciences, University of Southern Denmark, 2013).

Part-time Research Assistant, Muscle Physiology and Biomechanics, University of Southern Denmark, 2013-2016. Part-time Research Assistant, Department of Pathology, Odense University Hospital, 2016-2019. Research Assistant, Lupus and Vasculitis Clinic, Center for Rheumatology and Spine Diseases, Copenhagen University Hospital, Rigshospitalet, 2019-2021. Ph.D Student, Lupus and Vasculitis Clinic, Center for Rheumatology and Spine Diseases, Copenhagen University Hospital, Rigshospitalet, 2021–Present. With DIS since 2023.

# Kanwal Zahid Siddiqi (Copenhagen)

Ph.D. Student, Immunology and Infectious Diseases, University of Copenhagen, 2022.

Cand. Scient. Human Biology, University of Copenhagen, 2020. Research Assistant, Department of Clinical Medicine, University Hospital of Copenhagen, Rigshospitalet, 2020-2022. With DIS since 2022.