Åsa Susanna Hidmark (ASH), PhD

Senior Immunology Scientist & Strategic Consultant

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Professional Summary

PhD Biology specialist with 20+ years of complex biological problem-solving experience across immunology, vaccine development, and translational research. Through voluntary civic engagement in European policy proposals, developed systematic AI training methodologies that enhance analytical capabilities through structured feedback loops (documented methodology and results available). Proven ability to break down complex biological concepts into clear, structured explanations through university teaching and science communication while leveraging technology to accelerate research analysis.

Core Strengths:

- PhD at Karolinska Institutet 2007 in vaccine research, with 10+ years at Heidelberg institutions across diverse research areas
- Extensive experience in supervision, teaching, and science communication
- COVID-19 vaccine response expertise in vulnerable populations (dialysis, transplant patients)
- Pioneered novel methodologies for immune cell analysis in human disease
- Active science communication with 5,800+ Twitter followers focused on pandemic science
- EU policy analysis capabilities with proficient use of technology for research enhancement

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Core Competencies

Scientific Leadership & Strategy

- Experimental Design & Method Development
- Clinical Research Project Management
- Scientific Data Analysis & Interpretation
- Cross-functional Team Leadership & Mentoring

- Regulatory Documentation & Protocol Development
- Independent Research with Remote Collaboration Experience

Technical Expertise

- Vaccine Development & Immunotherapy
- COVID-19 Vaccine Response Analysis
- Flow Cytometry & Advanced Cell Analysis (including stem cell characterization)
- Cell Culture Systems (Primary cells, Cell lines, Co-culture, Caco-2 barrier studies)
- Animal Model Development & In Vivo Studies
- Tissue Processing & Histological Analysis
- Clinical Study Design & Statistical Analysis

Specialized Methodologies

- Peripheral Nerve Immune Cell Extraction (JoVE methodology)
- Hematopoietic Stem Cell Analysis & Characterization
- Epithelial Barrier Function Assessment (Caco-2 transepithelial resistance)
- Toll-like Receptor Functional Studies
- Innate Immune Recognition of RNA
- Electrical Muscle Stimulation Studies
- Transplantation Immunology & Tolerance Mechanisms

Communication & Strategy

- Science Communication & Digital Outreach (5,800+ Twitter followers with COVID-19 focus)
- Scientific Writing (Academic & Popular Science)
- EU Policy Analysis & Strategic Assessment
- Grant Writing & Biostatistics Collaboration
- Multilingual Communication (Swedish, English, German, French)
- Technology-Enhanced Research & Analysis

Professional Experience

Technology-Enhanced Research & Policy Work (2024-2025)

- **Applied technology tools extensively** for European policy research and analysis during voluntary civic engagement (eupolicycommons.eu)
- **Developed systematic training methodologies** for enhancing analytical output through structured feedback protocols

- **Created documentation frameworks** for methodology transfer and result verification
- **Fine-tuned specialized models** using personal datasets, discovering limitations of fragment-based training approaches

Senior Scientist | TolerogenixX GmbH

September 2020 - September 2022 (2 years) | Heidelberg, Germany

- Developed comprehensive theoretical frameworks describing immunological tolerance mechanisms for transplant therapy
- Led experimental validation using multiple research methodologies across immune regulation pathways
- Established documentation systems and standard operating procedures in LabFolder platform
- Supervised students and technical assistants in collaborative team environment
- Collaborated with CEO and cross-functional teams to advance transplant tolerance treatments
- Contributed to COVID-19 vaccine response studies in transplant patients

Career Development Break

2022 - 2025 Focused on family priorities during critical developmental years for four children, including supporting eldest through Abitur completion and youngest children's school preparation. Used this period for personal development, agricultural pursuits (duck breeding), and civic engagement with European political initiatives. Developing EUpolicycommons.eu as a collaborative pro-EU policy platform. Now returning to professional focus with renewed energy and expanded perspective.

Postdoctoral Researcher | DKFZ (German Cancer Research Center)

November 2017 - October 2020 (3 years) | Heidelberg, Germany (Peter Krammer)

- Conducted advanced immunogenetics research in collaboration with Professor Peter Krammer
- Developed expertise in immune tolerance mechanisms relevant to transplantation and cancer immunotherapy
- Investigated Annexin-mediated immune suppression in allergy models
- Applied experimental design skills to investigate complex immunological pathways
- Built collaborative relationships across multidisciplinary research teams with extensive remote collaboration experience
- Reduced to 80% time July 2020 for family commitments

Postdoctoral Researcher | Universitätsklinikum Heidelberg

February 2013 - May 2017 (4+ years) | Heidelberg, Germany (Peter Nawroth/Thomas Fleming)

- **Pioneered novel methodology for immune cell extraction from peripheral nervous tissue**, adapting techniques from murine to human applications
- **Published breakthrough methodology in Journal of Visualized Experiments (JoVE)**, enabling broader research community access
- **Advanced understanding of diabetic neuropathy** through innovative flow cytometry applications to nerve tissue
- **Designed and managed clinical stem cell analysis project** from concept to publication as independent researcher, including:
    - Setting up flow cytometry panels for hematopoietic stem cell characterization
    - Coordinating with biostatistics for power analysis
    - Managing electrical muscle stimulation studies in diabetes patients
    - Networking with stem cell researchers for data interpretation
- Collaborated with pathology departments to develop histological analysis skills for human nerve tissue
- Contributed to multiple high-impact publications in diabetes and neurology research
- Led establishment of bio-banking facilities

Postdoctoral Researcher | Karolinska Institutet

September 2012 - June 2013 (10 months) | Stockholm, Sweden

- Continued vaccine development research in collaboration with Gunilla Karlsson-Hedestam
- Developed expertise in epithelial barrier function studies using Caco-2 cell monolayers and transepithelial electrical resistance measurements
- Learned advanced cell culture techniques for intestinal barrier research
- Initiated collaboration with Peter Nawroth and Thomas Fleming (see previously)

Independent Postdoctoral Researcher | University of Heidelberg Medical Faculty

September 2010 - September 2012 (2 years) | Heidelberg, Germany (Alexander Dalpke)

- **Awarded competitive Medical Faculty Postdoc Fellowship** for independent research project
- **Discovered TLR13 as novel receptor for bacterial RNA** through comprehensive experimental design and execution
- Led all aspects of research including molecular cloning, cell culture, animal experimentation, and data analysis
- Supervised master's student and independently managed laboratory operations
- **Published breakthrough findings as first author in Journal of Immunology (2012)**, establishing new understanding of innate immune recognition
- Demonstrated ability to conduct independent, hypothesis-driven research with significant scientific impact

Postdoctoral Researcher | Karolinska Institutet (MTC) & Swedish Institute for Infectious Disease Control (SMI)

July 2007 - February 2009 (1 year 8 months) | Stockholm, Sweden (Gunilla Karlsson Hedestam)

- Conducted vaccine development and viral immunity research at intersection of academic and public health institutions
- **Collaborated internationally including research partnership at Scripps Institute with Professor Bruce Beutler** (summer 2008)
- Applied experimental design expertise to Type I interferon and viral immunity mechanisms
- Contributed to translational research bridging laboratory findings with public health applications

PhD Student & Molecular Biologist | Karolinska Institutet

2000 - 2007 (7 years) | Stockholm, Sweden (Gunilla Karlsson Hedestand, Peter Liljeström)

- **Conducted comprehensive PhD research on Type I interferons and viral immunity**
- Developed extensive expertise in vaccine development and immune response mechanisms
- Published multiple peer-reviewed articles on interferon signaling and viral immunity
- Secured competitive research grants totaling over 600,000 SEK
- Contributed to vaccine research group achievements and methodology development

Research Support Roles | Various Institutions

1999 - 2000

- Course Assistant, Department of Genetics, Stockholm University (200 hours)
- Secretary, Clinical Study, Merck (MSD Sweden) (4 months)

Education

PhD in Infection Biology | Karolinska Institutet

2007 | Stockholm, Sweden

- **Thesis:** "Induction of Type I Interferons and Viral Immunity"
- **Opponent:** Professor Bruce Beutler (Nobel Prize Winner 2011)
- Comprehensive training in vaccine development, viral immunity, and experimental design with extensive remote collaboration experience

Licentiate Degree | Karolinska Institutet

2006 | Stockholm, Sweden

- Advanced research training in infection biology

MSc in Molecular Biology | Stockholm University

1999 | Stockholm, Sweden

- **Grade:** 246 ECTS credits with high honors
- Specialization in molecular biology and genetics

International Exchange Programs

- **Imperial College, Silwood Park, London** (1999) - Thesis project in molecular evolution under supervision of Elisabeth Haggard, Professor of Genetics, Stockholm University
- **University Paris VII, Paris** (1998) - ERASMUS exchange in biochemistry
- **Natural Science Programme** (1994) - Eksjö Gymnasium, Sweden

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Key Publications & Impact

Recent High-Impact Research (2020-2025)

- Schwarz D, **Hidmark** AS, Sturm V, et al. "Exploring Structural and Molecular Features of Sciatic Nerve Lesions in Diabetic Neuropathy: Unveiling Pathogenic Pathways and Targets." *Diabetes* 2024. DOI: 10.2337/db24-0493
    - *Advanced understanding of diabetic neuropathy mechanisms*

Methodological Contributions

- **Hidmark AS**, Nawroth PP, Fleming T. "Analysis of Immune Cells in Single Sciatic Nerves and Dorsal Root Ganglion from a Single Mouse Using Flow Cytometry." *J Vis Exp*. 2017 Dec 6;(130). doi: 10.3791/56538.
    - *Breakthrough methodology enabling tissue-specific immune analysis*

Clinical Translation

- **Hidmark** A, Spanidis S, Fleming TH, et al. "Electrical muscle stimulation induces an increase of VEGFR2 on circulating hematopoietic stem cells in diabetes patients." *Clin Ther*. 2017 May 26.
    - *First-author clinical research managing patient studies*

Fundamental Discovery

- **Hidmark** A, von Saint Paul A, Dalpke AH. "Cutting edge: TLR13 is a receptor for bacterial RNA." *J Immunol.* 2012 Sep 15;189(6):2717-21.
    - *Independent discovery of novel immune receptor*

Additional High-Impact Publications

[25+ peer-reviewed publications spanning vaccine development, transplant immunology, inflammatory diseases, and clinical applications including work on interferon signaling, viral immunity, and immune regulation mechanisms]

Grants & Funding

Successfully Secured Research Funding (Total: >600,000 SEK)

- 2008: 344,500 SEK - Jonas Söderquist Foundation
- 2008: 243,000 SEK - Swedish Medical Society (Svenska Läkarsällskapet)
- 2007: 20,000 SEK - Sven Gard Foundation
- 2005: 23,000 SEK - Sven Gard Foundation
- 2010-2012: **Medical Faculty Postdoc Fellowship**, University of Heidelberg

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Teaching & Science Communication

University Teaching

- **2019-2020:** Lecturer, Master's Programme "Infectious Disease" (3 lectures, UniKlinikum Heidelberg)
- **2019-2020:** Lecturer, "Immunologie in Forschung und Klinik" (2 lectures, UniKlinikum Heidelberg)
- **2008:** Lecturer, "Clinical Immunology in Infectious Diseases" (Karolinska Institutet)
- **2006-2007:** Lecturer, "Basic Immunology for Clinical Researchers" (Karolinska Institutet)
- **2004-2006:** Virology seminar series for medical students (Karolinska Institutet)
- **2004:** Teacher, FEBS Advanced Course, University of Tartu, Estonia (10 days)
- **2000-2004:** Annual laboratory course in virology (Karolinska Institutet)

Science Communication & Outreach

- **Active Science Communicator:** Twitter @nymne with 5,800+ followers focused on COVID-19

pandemic science communication
- **Science Communication during COVID-19:** Extensive public engagement on vaccine science and SARS-CoV-2 research
- **Popular Science Writing:** Articles in Swedish Institute for Infectious Disease Control publications
- **EU Policy Development:** Founding EUpolicycommons.eu for European policy analysis

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Professional Development & Certifications

Research Training

- **FELASA Certificate (033/11/2018/063):** Laboratory Animal Science (2018)
- **Gentechnik Certification:** S1-S2 Animal Research (2018)
- **Advanced Teaching Training:** Multiple certificates in university pedagogy (2019)

Leadership Development

- **Global Entrepreneurial Leadership Certificate** - Stanford University (2006)
- **Supervising the Doctorate Course** - University of Heidelberg (2019)
- **Research-Based Learning Course** - University of Heidelberg (2019)

Technical Skills & Methodologies

Laboratory Techniques

- **Flow Cytometry:** Advanced multi-parameter analysis, stem cell characterization
- **Cell Culture:** Primary cells, cell lines, co-culture systems, barrier function studies
- **Animal Research:** Mouse, rat models; FELASA certified
- **Molecular Biology:** Cloning, PCR, gene expression analysis
- **Histology:** Tissue processing, immunohistochemistry, pathological analysis
- **Clinical Research:** Patient studies, biostatistics, regulatory compliance

Analytical & Digital Skills

- **Statistical Analysis:** Power analysis, biostatistics collaboration
- **Data Visualization:** Scientific graphics, presentation design
- **Technology Tools:** Research enhancement, data analysis, content development
- **Database Management:** LabFolder, scientific documentation systems

- **Grant Writing:** Successful funding acquisition experience

Languages

- **Swedish:** Native speaker
- **English:** Fluent (written/spoken)
- **German:** Professional working proficiency (B2+ level)
- **French:** Conversational

Professional References

Industry Leadership

Prof. Dr. Matthias Schaier, MBA
CEO, TolerogenixX GmbH
Email: schaier@tolerogenixx.com
Phone: +49 162 263 8005

Academic Excellence

Professor Alexander Dalpke
University of Heidelberg Medical Faculty
Email: Alexander.Dalpke@med.uni-heidelberg.de
Phone: +49-6221-56 38173

Professor Bruce Beutler *(Nobel Prize Winner 2011)*
UT Southwestern Medical Center, Dallas
Email: bruce.beutler@utsouthwestern.edu

Dr. Thomas Fleming
AG Nawroth, Universitätsklinikum Heidelberg
Email: Thomas.Fleming@med.uni-heidelberg.de
Phone: +49 17677702965 (private), +49 06221 5638490 (work)

Personal Interests & Community Engagement

- **Family:** Mother of four children (born 2007, 2009, 2016, 2018). Partner: Jürgen Hidmark
- **European Policy:** Founding EUpolicycommons.eu for collaborative EU policy development

- **Agriculture:** Duck breeding and sustainable farming practices
- **Active Lifestyle:** Horseback riding, skiing, hiking
- **Intellectual Pursuits:** Science fiction literature, horticulture, computer games
- **Community Service:** Political engagement in European integration initiatives

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Available for immediate start September 2025. Open to remote work across EU with occasional travel. Particularly interested in consulting, scientific advisory roles, and positions combining scientific expertise with strategic communication.