

Grant Kemp

Curriculum vitae



Stockholm University
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Researcher, *Stockholm University*, Stockholm, Sweden.

2018–present

with Gunnar von Heijne, Department of Biochemistry and Biophysics

Postdoctoral Fellow, *Stockholm University*, Stockholm, Sweden.

2014–2017

with Gunnar von Heijne, Department of Biochemistry and Biophysics

PhD, *University of Alberta*, Edmonton, Canada, Biochemistry.

2007–2013

PhD Thesis *Towards a structural understanding of eukaryotic Na⁺/H⁺ exchangers*,
Supervisors: Dr. Howard Young and Dr. Larry Fliegel

BSc, *University of Alberta*, Edmonton, Canada.

2003–2007

Specialization in Biochemistry

Publications

Kemp, G., Nilsson, O. B., Tian, P., Best, R. B. & von Heijne, G. (2020). Cotranslational folding cooperativity of contiguous domains of α -spectrin. *Proceedings of the National Academy of Sciences* **117**, 14119–14126.

Kemp, G.[‡], Kudva, R.[‡], de la Rosa, A. & von Heijne, G. (2019). Force-Profile Analysis of the Cotranslational Folding of HemK and Filamin Domains: Comparison of Biochemical and Biophysical Folding Assays. *Journal of Molecular Biology* 1308–1314. [‡]**Contributed equally to this work.**

Kemp, G. & Cymer, F. (2014). Small membrane proteins – elucidating the function of the needle in the haystack. *Biological Chemistry* **365**, 1365–1377.

Kemp, G., Larry, F. & Young, H. S. Membrane transport piece by piece: Production of transmembrane peptides for structural and functional studies. In *Current Protocols in Protein Science*, vol. 29.8, 1–28 (John Wiley & Sons, Inc., 2014).

Müller, M., Kunz, H. H., Schroeder, J. I., **Kemp, G.**, Young, H. S. & Neuhaus, H. E. (2014). Decreased capacity of sodium import into *Arabidopsis* chloroplasts impairs salt tolerance, photosynthesis and plant performance. *Plant J* **78**, 646–658.

Ullah, A., **Kemp, G.**, Lee, B., Alves, C., Young, H. S., Sykes, B. D. & Larry, F. (2013). Structural and functional analysis of transmembrane segment IV of the salt tolerance protein sod2. *J Biol Chem* **288**, 24609–24624.

Kemp, G., Young, H. S. & Fliegel, L. (2008). Structure and function of the human Na⁺/H⁺ exchanger isoform 1. *Channels (Austin)* **2**, 329–336.

Moncoq, K.[‡], **Kemp, G.**[‡], Li, X., Fliegel, L. & Young, H. S. (2008). Dimeric structure of human Na⁺/H⁺ exchanger isoform 1 overproduced in *Saccharomyces cerevisiae*. *J Biol Chem* **283**, 4145–4154. [‡]**Contributed equally to this work.**

Seminars

Hunting for small membrane proteins in eukaryotic cells, *invited*.

Nov 8, 2019

CNRS Institut de Microbiologie de la Méditerranée, Marseilles, France

Picking up the Needles from the Haystack: Identification and characterization of novel small membrane proteins in eukaryotic cells, *selected abstract*.

April 13, 2018

Canadian Society for Molecular Biosciences 61st Annual Meeting, Banff, Canada

Two's Company: Cooperativity in co-translational protein folding, *invited*.

April 6, 2018

Biochemistry 626 seminar, University of Alberta, Edmonton, Canada.

Finding the Needles in the Haystack: explorations of the mammalian small membrane proteome, *selected abstract*.

May 11, 2017

Biophysical Society: Membrane Receptor Organisation and Signal Transduction, Stockholm, Sweden

Studying the ubiquitous human sodium proton exchanger: from mice to to the test tube, *selected abstract*.

Sept 21, 2010

2nd Joint Membrane Transport Symposium, Kaiserslautern, Germany

Posters

Presenting author at an international meeting:

CSMB 61st Annual Meeting (April 12, 2018, Banff, Canada)

FASEB Molecular Biophysics of Membranes (July 10, 2016, Snowmass, USA)

EMBO Mechanisms and regulation of protein translocation (March 21, 2015, Dubrovnik, Croatia)

Membrane Transport and Communication (September 29, 2014, Frankfurt, Germany)

International Research Training Group Jasper Symposium (August 28, 2012, Jasper, Canada)

2nd Joint Membrane Transport Symposium (September 21, 2010, Kaiserslautern, Germany)

GRC: Protons & Membrane Reactions (February 22, 2009, Ventura, CA)

53rd Annual Meeting of the CSBMCB (August 15, 2010, Banff, Canada)

52nd Annual Meeting of the Biophysical Society (February 2, 2008, Long Beach, CA)

Funding

Scholarships

CGS Doctoral award, *Canadian Institutes of Health Research*. 2010–2013

\$90,000, National competition

Walter H. Johns Graduate Fellowship, *University of Alberta*. 2011–2013

\$8,870, Tuition award for holding a national scholarship

Top-Up Funding, *Alberta Innovates - Technology Futures*. 2010–2013

\$30,000, Provincial award for holding a national scholarship

Doctoral award, *Alberta Heritage Foundation for Medical Research*. 2010–2012

\$43,000, Provincial competition (declined)

President's Doctoral Prize of Distinction, *University of Alberta*. 2010–2011

\$10,000, Tuition award for holding a national major doctoral scholarship

Doctoral award, *Alberta Heritage Foundation for Medical Research*. 2009–2010

\$20,000, Provincial competition

CGS Master's award, *Canadian Institutes of Health Research*. 2008–2009

\$17,500, National competition

Top-Up Funding, *Alberta Innovates - Technology Futures*. 2008–2009

\$12,500, Provincial award for holding a national scholarship

Queen Elizabeth II award, *University of Alberta*. 2008–2009

\$10,200, Local competition (declined)

Walter H. Johns Graduate Fellowship, *University of Alberta*. 2008–2009

\$4,435, Tuition award for holding a national scholarship

Alexander Rutherford Scholarship, *Government of Alberta*. 2003

\$2,500, Awarded to students who graduated with honours.

Research Allowances

Canadian Institutes of Health Research, \$15,000. 2010–2013

Alberta Innovates - Technology Futures, \$15,000. 2010–2013

Alberta Heritage Foundation for Medical Research, \$1,500. 2009–2010

Canadian Institutes of Health Research, \$5,000. 2008–2009

Experience

Mentoring

Bachelor's student supervisor, *Bachelor's Degree Project*. 2019

Stefan Freigi, Mapping the cotranslational folding and processing of PhoA

Bachelor's student supervisor, *Research practicum course*. 2018

Andrés de la Rosa, now a Masters student in Neurochemistry, Department of Biochemistry and Biophysics, Stockholm University, Sweden, in the Force-profile analysis of the cotranslational folding of HemK

Bachelor's student supervisor, *Collaboration with Jilin University, China.* 2016

Junru Li, now a Masters student in Biomedical Engineering at Colombia University, NY, in the characterization of novel human small membrane proteins from the Uniprot database

Masters' student supervisor, *Funded by ERASMUS.* 2015

Tamara Grund, currently a PhD student in Bayreuth, Germany, in the expression and characterization of novel small membrane proteins from human cells

Summer student supervisor, *Funded by the Alberta Heritage Foundation.* 2009

Supervised Zachary Guenther, now a Graduate of radiology, University of Calgary (fellowship in Thoracic Imaging at Stanford) in the optimization of the expression and purification of the human Na⁺/H⁺ Exchanger in *Saccharomyces cerevisiae*

Administrative

(EM)bracing (for) Open Science, Panel discussion. May 2019

Was the primary organizer for a 2 hour panel discussion about strategies for Early Career Researchers to drive and benefit from the move to Open Science

National Junior Faculty Conference: Sustainable Development of Future Academia. 2019-2020

Subcommittee member to plan the "Future of science in Sweden" session at our inaugural conference that gathers Early Career Researchers, funders, publishers, and academic leaders to propose a vision and plan for the sustainable future of academic research in Sweden.

National Junior Faculty Steering Committee member. 2019-present

Serving as a representative of the Stockholm University Young Faculty in coordinating a united voice for Early Career Researchers in Sweden. [@SUYF19](https://twitter.com/SUYF19) <http://www.nationaljf.se/>

Secretary for the Stockholm University Young Faculty. 2018-present

Executive role in planing events and advocating for Early Career Researchers at Stockholm University

[@SUYoungFaculty](https://twitter.com/SUYoungFaculty) <https://bit.ly/2OWARq9>.

President Biochemistry Graduate Student Association. 2010-2012

Local and provincial advocacy, student representative at departmental meetings, a founding member of biomedical science interdepartmental association

Student representative - Departmental Chair Review Committee. 2010

Gauged student satisfaction with current chair and discussed issues with departmental, faculty and University officials

Vice-president Biochemistry Graduate Student Association. 2008-2009

Organize student events, involved in local and provincial student advocacy

Management and training

EMBO Laboratory Management for Postdocs, completed. 2017

Soft skills course on mentoring, time-management, and conflict resolution.

Lab management. 2016-present

Primarily responsible lab member for equipment maintenance and consumable ordering.

Languages

English: Complete fluency *Read/write/speak*

French: Some communication *Read/speak*

Swedish: Everyday communication *Read/speak*

Mentors

Dr. Howard S. Young

PhD supervisor

Department of Biochemistry

University of Alberta

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Dr. Larry Fliegel

PhD supervisor

Department of Biochemistry

University of Alberta

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Dr. Gunnar von Heijne

Postdoctoral supervisor

Department of Biochemistry and Biophysics

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