

Amr Kataya

Email: amr.kataya@ucalgary.ca; dramrkataya@gmail.com

Address: 14-1175 Berkley Drive NW, Calgary, Alberta, Canada
PR Canada Citizen Norway B. day: Nov^{1st} 1983 M:4033905514

Twitter @AmrKataya1 LinkedIn: in/amr-kataya-5b803836/

ORCID: <https://orcid.org/0000-0003-1349-0363>

Website: www.katayaproject.com

Employment

- 09/2020- present: Researcher, Faculty of Science, University of Calgary, Calgary, AB, **Canada**
08/2019-08/2020: Research Scientist at Missouri University, Bond LSC, Columbia, Missouri, **USA**
02/2016-07/2019: Principal Investigator (Funded by Research Council of Norway “RCN”)
University of Stavanger, **Norway**
02/2014-01/2016: Postdoctoral Fellow, University of Stavanger, **Norway**
02/2012-01/2014: Postdoctoral Science Fellow, University of Stavanger, **Norway**

Education

- 09/2008-12/2011: Ph.D. in Biological Chemistry “Identification and functional studies of peroxisome-targeted proteins implicated in plant innate immunity and detoxification in Arabidopsis thaliana.” University of Stavanger, **Norway**
10/2007-08/2008: Post-Master training at MAICh, Chania, Crete, Greece
10/2006-10/2007: MSc in Plant Biotechnology “Detection, complete nucleotide sequence and construction of full cDNA clones of Greek isolate of Tomato chlorosis virus” MAICh, **Greece**
10/2005-06/2006: Graduate Diploma in Natural Products and Biotechnology, MAICh, **Greece**
10/2004-06/2005: Post-graduate diploma in Physiology and Biochemistry, University of Suez-Canal, **Egypt**
10/2000-05/2004: Bachelor of Science in Chemistry and Biochemistry, University of Mansoura, **Egypt**

Scholarships and Grants

- 08/2017-07/2018: Mobility grant from Research Council of Norway for visiting Prof. Moorhead/Canada (USD 42 K/NOK 382 K)
02/2016-07/2019: Young research talent grant (USD 871 K/ NOK 7.4 Million) from the independent program. (FRIPRO/RCN) <https://app.dimensions.ai/details/grant/grant.4851629>
10/2007-08/2008: Fellowship to work as a post-MSc graduate; MAICh, Chania, Crete, Greece
10/2005-10/2007: Full scholarship to complete MSc program; MAICh, Chania, Crete, Greece

Mobility

- 08/2017-04/2019: Visiting Researcher at Prof. Greg Moorhead’s lab, Dept. Of Biological Sciences, University of Calgary, Calgary, Alberta, **Canada**
24/8-04/09/2014: Prof. Geir Slupphaug Proteomics lab, Department of Cancer Research and Molecular Medicine, NTNU, Trondheim, **Norway**
10/2010-12/2010: Prof. Jianping Hu and Prof. Sheng Yang He; MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, MI 48824-1312, **USA**
01/2008-04/2008: Institute of Molecular Biology and Biotechnology, Foundation for Research and Technology, University of Heraklion, 1527, GR-71110, Crete, **Greece**

Research Experience

Research Scientist, the University of Calgary

Since Sept 2020

- Verification studies for my discovery in the role of protein phosphorylation in regulating peroxisome-oil body crosstalk during germination. This project includes targeted functional studies and biochemical analyses that complements our multi-omics results (quantitative TMT-proteomics and phosphoproteomics, and global transcriptomics)
- Deciphering the phospho-sites importance for the peroxisomal membrane protein PEX14. I already performed quantitative label-free phosphoproteomics and SDMs and functional investigations for established complemented lines are under investigation
- Verifying the protein phosphatase 2A binding motif in a plant ubiquitin-like protein, which I extracted by two Y2H library screens. This includes cloning, biochemical analysis, and protein-protein interaction studies.

Research Scientist, University of Missouri

_ Aug 2019 .. Aug 2020

- Analyzed mass spectrometry data and wrote a manuscript "Decoding Arabidopsis thaliana CPK/SnRK superfamily kinase-client signaling network" submitted to Plant Physiol (Nov 2020)
- Isolated homozygous T-DNA lines and analyzed the fatty acid methyl esters of 9 potential ACCase interactors/regulators for oil synthesis in plants
- Searched for ACCase-CT interactors. Successfully cloned three versions of GFP-fused beta-carboxyl transferase to chloroplast and generating transgenic lines for CoIPs
- Isolated total RNA of badc lines developing seeds (high-oil lines) and investigated their transcriptome in addition to quantitative 9-plex TMT-proteomics

Project team leader, University of Stavanger

_ Feb 2016 .. July 2019

- As the leader of the prestigious Young Talent Grant, I contributed significantly to establishing a framework to study peroxisomal regulation by phosphorylation and interaction with other organelles. My research led to expanding the knowledge on the peroxisomal phosphoproteome (<https://app.dimensions.ai/details/grant/grant.4851629>)
- Established and led a team of scientists in Norway and Canada
- Main supervisor of three MSc graduate students, where we worked on gene editing two plants using CRISPR-CAS technology. We applied three ways of delivery of gRNAs and CAS9 through Agrobacterium, gRNA transcripts in combination with CAS9 protein and/or CAS9 transcripts
- Employed mass spectrometry, global transcriptomics, and reverse genetics and established several sub-projects to identify the regulatory role of protein phosphorylation in peroxisomes
- Proposed an important model for regulating fatty acid beta-oxidation by phospho-regulation (Kataya et al., 2019), which will have an impact on biotechnological applications and industrial-environmental applications

Visitor Scientist, University of Calgary

_ Aug 2017 .. Apr 2019

In addition to working on my Young Talent projects, I collaborated with three professors on projects:

- With Prof. Muench: Establishing transgenic lines (OE and CRISPR/CAS) for glyoxysomal malate dehydrogenase and its truncated form for investigating the effect of peroxisomal signaling on its binding to RNA and PTMs
- With Prof. Moorhead: Cloning, and isolation of recombinant proteins of putative substrates of SLP1 phosphatase and CKII kinase. Also cloning some human PP2A subunits and substrates for binding motif studies that were used for pull-down studies in culture cells
- With Prof. Samuel: We collaborated on my peroxisomal kinases project which has been translated into a submitted manuscript

Postdoctoral fellow, University of Stavanger

_ Feb 2012 .. Jan 2016

- I worked on and established new projects and co-supervised several students.
- We explored new regulators and functions of protein phosphatases 2A and 4 using multiple approaches (ex. reverse genetics, transcriptomics, immunodetections, DNA repair mechanisms, and physiology experiments, establishing transgenic lines).
- We identified the heterocomplex of PP2A in peroxisomes and characterized its function

PhD thesis, University of Stavanger

_ Sept 2008 .. Dec 2011

- Experimental verification of new bioinformatic models for peroxisome signals
- Identifying peroxisomal proteins implicated in plant innate immunity and abiotic stress
- Investigating peroxisomal targeting of glutathione-ascorbate cycle enzymes and glutathione transferases

Research Assistant & MSc thesis, Mediterranean Agronomic Institute of Chania _ Oct 2005 .. Aug 2008

- Identified two novel RNA silencing suppressors from two plant viruses
- Full sequencing and construction of ToCV virus RNA1 and RNA2 for in-vitro transcription. This included RT-PCR amplification of 18 viral RNA-derived genes and subsequent cloning

Supervision and Teaching Experience

Research Team Supervision _ 2016-2019

- Two research assistants “Dr. Sayantan Banerjee” and “Nitija Gautam” at UofC, Canada
- Postdoctoral Fellow, Dr. El-Shobaky "studying the role of mitochondrial PP2A complex in energy metabolism" and research assistant (M. Harris) at University of Stavanger, Norway
- Masters project by E.M. Klinkenberg entitled Investigating DNA-free genome editing in Arabidopsis with pre-assembled CRISPR-CAS9 ribonucleoproteins and transcripts.
- Masters project by Yvonne Sletthaug entitled Targeted mutagenesis of peroxisomal protein phosphatases using CRISPR-CAS9 approach.
- Masters project by Hanna Rovik entitled Employing CRISPR-CAS9 approach for DNA free editing of *Solanum Lycopersicum* genome with pre-assembled CRISPR-CAS9 ribonucleoproteins and transcripts.

Co-supervision & Mentoring

- **2017-2018:** Mentoring two bachelor’s projects at the UofC, Calgary/Canada in a project entitled identifications of chloroplast phosphatase substrates
- **2015-2016:** Masters project by Toga Pangihotan Napitupulu in a project entitled protein phosphatase 4 reverse genetics: Investigation of the Physiological Function of Protein Phosphatase 4 (PP4) in *Arabidopsis thaliana*
- **2013-2014:** Masters project by Edit Schei entitled Identification of peroxisomal phosphatases using bioinformatics and in-vivo subcellular localization.
- **2013-2014:** Researcher grant-IS-MOBIL by Mallesham Bulle in a project entitled functions of regulatory B” subunits of protein phosphatase 2A.
- **2013-2014:** Postdoc grant research by Zekarias Ginbot entitled Investigating the role of protein phosphatase-4 in *Arabidopsis thaliana*
- **2013-2014:** Masters project by Maria Terese Creighton, University of Stavanger, entitled Protein phosphatase 2A (PP2A) phosphatase activator (PTPA) in *Arabidopsis thaliana*.
- **2010-2011:** Masters project by Chimuka Mwaanga, University of Stavanger, entitled Identif_ication and expression analysis of peroxisome-targeted defense proteins mediating innate immunity in the model plant *Arabidopsis thaliana*.
- **2008-2009:** Three undergraduate students in projects related to the identification of new peroxisomal proteins using in vivo verification studies.

Pedagogy

- **Certificate in University Teaching and Learning** from **the Taylor institute for teaching and learning**, University of Calgary, Canada
- Two guest lectures "CRISPR-CAS9 technology" for a master biology course, University of Stavanger, Norway
- Teaching assistant for biotechnology course, Maich, Chania, Greece
- Certificate in Theories and Issues in Postsecondary Teaching and Learning, Canada
- Certificate in Developing Your Teaching Dossier, Canada
- Certificate in Learning Spaces and Digital Pedagogy Program, Canada
- Certificate in Emerging Teachers Development, Canada
- Certificate in SoTL Foundations Program, Canada

SCIENTIFIC CONTRIBUTIONS

Peer-reviewed publications “Correspondence is underlined”

1. Amr R. A. Kataya, Ahmed Elshobaky, Behzad Heidari, Dugassa Feyissa, Jay J. Thelen, Cathrine Lillo. Multi-targeted trehalose-6-phosphate phosphatase I harbors a novel peroxisomal targeting signal type 1 and is essential for flowering and development (2020). *Planta* 251, 98
2. Amr R. A. Kataya, Douglas G. Muench, and Greg B. Moorhead. A Framework to Investigate Peroxisomal Protein Phosphorylation in Arabidopsis. *Trends in Plant Science* (24), Issue 4, 366-381.
3. Chris White-Gloria, Kayla Marritt, Jayde Johnson, Amr R. A. Kataya, Ahmad Vahab, and Greg B Moorhead (2018). Protein kinases and phosphatases of the plastid and their potential role in starch metabolism. *Frontiers in Plant Science* (9), 1032.
4. Maria T. Creighton, Anna Kolton, Amr R. A. Kataya, Jodi M. Grødem, Irina O. Averkina, Behzad Heidari, Cathrine Lillo. Methylation of protein phosphatase 2A – influence of regulators and environmental stress factors. *Plant Cell Environ.* 2017; 40:2347–2358.
5. Amr R. A. Kataya, Maria T. Creighton, Toga P. Napitupulu, Christine Sætre, Peter Ruoff, Cathrine Lillo (2017). Platinum Sensitive 2 Like impacts growth, root morphology, seed set, and stress responses. *PLoS One* 12(7): e0180478.
6. Maria T. Creighton, Maite Sanmartin, Amr R. A. Kataya, NN, Jose J Sánchez-Serrano, Cathrine Lillo. Light regulation of nitrate reductase by catalytic subunits of protein phosphatase 2A. *Planta*. 2017 Jun 27. doi: 10.1007/s00425-017-2726-4.
7. Amr R. A. Kataya, Edit Schei, Cathrine Lillo (2016). Towards understanding peroxisomal phosphoregulation in Arabidopsis thaliana. *Planta* 243(3):699-717. doi: 10.1007/s00425-015-2439-5. Epub 2015 Dec 9
8. Amr R. A. Kataya, Behzad Heidari, and Cathrine Lillo (2015). Protein phosphatase 2A regulatory subunits affecting plant innate immunity, energy metabolism, and flowering time - joint functions among B' subfamily members. *Plant Signaling and Behavior*. Doi: 10.1080/15592324.
9. Amr R. A. Kataya, Edit Schei, Cathrine Lillo (2015). MAPK phosphatase 1 harbors a novel PTS1 and targets peroxisomes upon stressful conditions. *J Plant Physiol* 179: 12-20.
10. Amr R. A. Kataya, Behzad Heidari, Lars Hagen, Roald Kommedal, Geir Slupphaug, and Cathrine Lillo (2015). Protein phosphatase 2A holoenzyme is targeted to peroxisomes by piggybacking and positively affects peroxisomal beta-oxidation. *Plant Physiology*, 167: 493-506.
11. Cathrine Lillo, Amr R. A. Kataya, Behzad Heidari, Maria Creighton, Dugassa Nemie-Feyissa, Zek Ginbot, Else M Jonassen (2014). Protein phosphatases PP2A, PP4, and PP6 – mediators and regulators in development and in responses to environmental cues. *Plant Cell Environment*, 1365-3040.
12. Gopal Chowdhary, Amr R. A. Kataya, Thomas Lingner, and Sigrun Reumann (2012). Non-Canonical Peroxisome Targeting Signals: Identification of Novel PTS1 Tripeptides and Characterization of Enhancer Elements by Computational Permutation Analysis. *BMC Plant Biology*, 12:142
13. Lingner, T., Amr R. A. Kataya, and Reumann, S (2012). Experimental and Statistical Post-Validation of Positive Example EST Sequences Carrying Peroxisome Targeting Signals Type 1 (PTS1). *Plant Signaling and Behavior* 1;7(2):263-8.
14. Lingner, T., Amr R. A. Kataya, Antonicelli, G.E., Benichou, A., Nilssen, K., Chen, XY, Siemsen, T., Morgenstern, B., Meinicke, P., Reumann, S (2011). Identification of Novel Plant Peroxisomal Targeting Signals by a Combination of Machine Learning Methods and in vivo Subcellular Targeting Analyses. *Plant Cell*, 23, 1556-1572.
15. Amr R. A. Kataya and Reumann S (2010). Arabidopsis glutathione reductase 1 is dually targeted to peroxisomes and the cytosol. *Plant Signaling and Behavior* 5:2, 171-175.
16. Amr R. A. Kataya, Mohamed N. S. Suliman, Kriton Kalantidis, and Ioannis C. Livieratos (2009). Cucurbit yellow stunting disorder virus p25 is a suppressor of post-transcriptional gene silencing. *Virus Research* 145, 48–53.
17. Amr R. A. Kataya, E. Stavridou, K. Farhan, and I. Livieratos (2008). Nucleotide sequence analysis and detection of a Greek isolate of Tomato chlorosis virus. *Plant pathology* 57, 819–824.

Book Chapters

1. Amr R. A. Kataya Plant Epigenetics: Basic Research and Expectations for Crop Applications (chapter 10) to series: I: Progress in Food Biotechnology; Book Series: Recent Advances in Biotechnology. **Bentham eBooks** 2018 ISBN978-1-68108-742-9.5
2. Amr R. A. Kataya, Jianping Hu, Douglas G. Muench, and Greg B Moorhead (2020) Plant Peroxisomal Protein Kinases Implicated in Stress-Related Responses. Protein Kinases and Stress Management in Plants - Functional Genomic Perspective. **JohnWiley Sons Inc** 2020 ISBN13: 9781119541516

Submitted manuscripts

1. Nagib Ahsan, Amr R. A. Kataya, Shyama Prasad Rao, Kirby N Swatek, Rashaun S Wilson, Louis J Meyer, Alejandro TovarMendez, Severin Stevenson, Eric T. Fedosejevs, Justyna Maszkowska, Grazyna Dobrowolska, Qiuming Yao, Dong Xu, Jay J Thelen. Arabidopsis thaliana CPK/SnRK superfamily kinase-client 4 signaling network (Submitted to *Plant Physiology*, Nov 2020).

2. **Amr R. A. Kataya**, Nitija Gautam, Muhammad Jamshed, Douglas G. Muench, Marcus A. Samuel, and Greg B. Moorhead. Identifying Peroxisomal Protein Kinases in Arabidopsis (**TPJ, in revision**)

Invited speaker

- **2019**: Cell Biology Department, Medical School, University of Alberta, Edmonton, Alberta, Canada
- **2018**: Plant Department, Michigan State University, East Lansing, MI, USA

Reviewer Editor/Reviewer

- Frontiers in cell developmental biology
- Springer-Plant Growth Regulation
- Plant Cell Reports
- Journal of Integrative Plant Biology

Conferences

1. **Amr R. A. Kataya**, Devang Mehta, Nitija Gautam, Laurent Brechenmacher, R. Glen Uhrig, and Greg Moorhead. The role of phosphorylation in regulating peroxisome-oil bodies crosstalk during germination. CSPB/SCBV 2020 Virtual Meeting, Canada. (**Oral presentation**)
2. **Amr R. A. Kataya**, Douglas G. Muench, and Greg B Moorhead. Post-translational modification by phosphorylation in Arabidopsis peroxisomes: findings and putative impacts. Open Peroxisome meeting 2018, 25-26 October 2018, Groningen, Netherlands. (**Poster**)
3. **Amr R. A. Kataya**, Greg Moorhead. Identifying peroxisomal phospho-substrates and building a framework to study peroxisomal phospho-regulation. PlantBiology2018, 13-18 July 2018, Montreal, Canada. (**Poster**)
4. **Amr R. A. Kataya** Constructing knowledge framework to study peroxisomal phosphoregulation. 2018 Keystone Symposia Conference A4: Plant Signaling: Molecular Pathways and Network Integration, Tahoe City, California, USA, 21-25 January 2018. (**Poster**)
5. Christian Falter, Delphine Crape, Alexandra Schatt, **Amr R. A. Kataya**, Sigrun Reumann. Characterization of Arabidopsis thaliana immune-associated nucleotide-binding protein 12 (AtIAN12). 17-21 September 2017, Botanikertagung 2017 (Plant Research in a Changing World), Kiel, Germany (**Poster**)
6. Nguyen Binh Anh Thu, Christian Falter, **Amr R. A. Kataya**, Sigrun Reumann. Subcellular Targeting and Expression Analyses of Peroxisomal NDR1 Homologs under Abiotic and Biotic Stress Conditions. 17-21 September 2017, Botanikertagung 2017 (Plant Research in a Changing World), Kiel, Germany
7. Averkina, Irina Orestovna; Creighton, Maria Terese; Nemie-Feyissa, Dugassa; **Amr R. A. Kataya**; Lillo, Cathrine (2017). Protein phosphatase 2A activity in various Arabidopsis mutants. BioCat; 2017-06-12 - 2017-06-14.
8. **Amr R. A. Kataya**, Ahmed Elshobaky, Edit Schei, Cathrine Lillo. Trehalose-6-phosphate phosphatase I harbors a novel peroxisomal signal and is implicated in abiotic stress and development. 19-23 June 2017, ICAR: Arabidopsis Research in 2017 Beyond, St. Louis, MO, USA (**Poster**)
9. Ahmed Elshobaky, Cathrine Lillo, **Amr R. A. Kataya**. Investigating the role of PP2A-B' in regulating energy metabolism in mitochondria. 21-22 June 2017, NorPlantBio, Hamar, Norway
10. **Amr R. A. Kataya**. Organelle-Mediated Reversible Phosphorylation: Players Identification and Functional Implications. 15-17 June 2016, Norwegian Plant Biology 2016 in Trondheim, Norway. (**Oral presentation**)
11. **Amr R. A. Kataya**, Edit Schei, and Cathrine Lillo. Peroxisomal Protein Phosphatases: Identifications and Biotic Stress Implications. 2-4 July 2015, Plant Biotic Stresses Resistance Mechanism II, Vienna, Austria (**Oral present.**)
12. Mallesham Bulle, **Amr R. A. Kataya**, Behzad Heidari, and Cathrine Lillo. Investigating Protein Phosphatase 2A Regulatory Subunits: From Subcellular Localization to Abiotic Stress Implications. 29 June-1 July 2015, Plant Abiotic Stress Tolerance III, Vienna, Austria (**Poster**)
13. Delphine Crape, Kirsti Sørhagen, **Amr R. A. Kataya**, and Sigrun Reumann. Pathogen-inducible peroxisomal proteins mediating disease resistance. 9-11 September 2014, Open European Peroxisome meeting, Neuss, Germany
14. Piotr Lisik, **Amr R. A. Kataya**, Sigrun Reumann. Survival protein SurE-like phosphatase/nucleotidase- novel stress-responsive protein of peroxisomes? 9-11 September 2014, Open European Peroxisome meeting, Neuss, Germany
15. Kirsti Sørhagen, **Amr R. A. Kataya**, Chimuka Mwaanga, and Sigrun Reumann. The role of peroxisomes in plant immunity. 9-11 September 2014, Open European Peroxisome meeting, Neuss, Germany
16. Marit Larsen, **Amr R. A. Kataya**, Chimuka Mwaanga, Kirsti Sørhagen, and Sigrun Reumann. Peroxisome Targeting of Alternatively Spliced Pathogen Defense Proteins. 7-8 November 2013, PlantBio, National Plant Biology Conference Tromsø, Norway 6
17. **Amr R. A. Kataya**, Behzad Heidari, and Cathrine Lillo. B' regulatory subunit of protein phosphatase 2a is involved in peroxisomal fatty acid -oxidation, flowering, and plant innate immunity. 4-6 July 2013, SPS conference: plant signaling in a changing environment, Evry, France (**Poster**)
18. **Amr R. A. Kataya**, Chimuka Mwaanga, and S. Reumann. The Role of Peroxisome-Targeted NDR1/HIN1 Like (NHL) Proteins in Pathogen Defence. 11 August 2011, international conference on plant peroxisome research, Minneapolis, Minnesota, USA 21-25 August 2011, SPPS, Stavanger, Norway (**Poster**)

19. **Amr R. A. Kataya** and Sigrun Reumann. Identification of novel peroxisomal defense-related proteins. 2nd annual NorMIC meeting, 12/11-13/11 2009, Stavanger, Norway (**Oral presentation**)
20. Gerardo E. Antonicelli, Thomas Lingner, **Amr R. A. Kataya**, Aline Benichou, Peter Meinicke, and Sigrun Reumann. Development of SVM-Based Prediction Algorithms for Plant Peroxisomal PTS1 Proteins by a Novel Iterative Approach Integrating Computational Science and Experimental Cell Biology. International Workshop on Plant peroxisomes. 30/6 2009, Edinburgh, Scotland, UK
21. **Amr R. A. Kataya** and Sigrun Reumann. Plant Peroxisomal Detoxification Reactions Mediated by Glutathione Dependent Enzymes. 20th ICAR, 30/6-4/7 2009, Edinburgh, Scotland, UK (**Poster**)
22. **Amr R. A. Kataya**, Kalantidis, K. Livieratos, I. C. Molecular studies on members of the genus Crinivirus. 14th Panhellenic Phytopathological Conference, 7-10 October 2008, 34pp, Nafplion, Peloponnesus, Greece (**Oral presentation**)

Courses/Workshops

09-10/04/2020	Software Carpentry: R Workshop, University of Missouri, Columbia, USA
21-26/07/2019	Proteomics Bioinformatics course, World Genome Campuses, Cambridge, UK
6-7/03/2018	Research leadership, administrative challenges, and a course in managing a research project and group, RCN, Oslo, Norway
18/06/2017	Data Carpentry workshop, Danforth Plant Science Center in St. Louis, USA
19/06/2017	ATAC-seq workshop, Danforth Plant Science Center in St. Louis, USA
4-5/04/2017	Course on the dissemination of research to the public, RCN, Oslo, Norway
12-15/05/2014	Bioinformatics for Proteomics course, BioProt-Bergen, Proteomics Unit, University of Bergen, Norway
26-27/02/2013	Training course in radiation and radiation safety at CORE, UiS, Norway
07-10/03/2011	Presentation skills training course, UiS, Norway

RESEARCH PROJECTS

Independent Projects

2019; 2021-	The role of protein phosphorylation in regulating peroxisome-oil body crosstalk during germination
2019; 2021-	Regulating Peroxisome Biogenesis and Fatty Acid β -oxidation by Protein Phosphorylation
2016-2019	Signaling via reversible phosphorylation in organelles
2016-2020	Trehalose-6-P phosphatase role in flowering time and abiotic stress
2016-2018	Supervision of postdoc “Studying the role of mitochondrial PP2A complex in energy metabolism and abiotic stress ”
2016-2017	Supervision of MSC “Investigating DNA-free genome editing in Arabidopsis with pre-assembled CRISPR-CAS9 ribonucleoproteins and transcripts”
2016-2017	Supervision of MSC “Targeted mutagenesis of peroxisomal protein phosphatases using CRISPR-CAS9 approach”
2016-2017	Supervision of MSC “Employing CRISPR-CAS9 approach for DNA free editing of <i>Solanum Lycopersicum</i> genome with pre-assembled CRISPR-CAS9 ribonucleoproteins and transcripts”

Collaborative Projects “experimental, mentoring, and/or intellectual inputs”

2017-2020-	Biochemical identification of the substrates of Shewanella-like phosphatase 1 (Collaboration with Prof. Greg Moorhead)
2018-2019	Defining the interacting partners and recognition motif of the mammalian protein phosphatase 2A (Collaboration with Prof. Greg Moorhead, UofC)
2018; 2021-	Establishing GFP-tagged peroxisomal gMDH1 and truncated non-peroxisomal gMDH1 for crosslinking and investigating microtubules binding and PTMs (Collaboration with Dr. Douglas Muench, UofC)
2021-	Establishing high-oil Canola line utilizing β -oxidation manipulation (Collaboration with Prof. Marcus Samuel, UofC)
2021-	Improving Canola for various industrial applications (Collaboration with Prof. Marcus Samuel, UofC)
2020-	Investigating the role of T6P role in flowering time (Collaboration with Prof. Cathrine Lillo, Norway)
2018-	Co-supervision of PhD student “the role of PP2A subunits in Tomato abiotic stress” (Collaboration with Prof. Cathrine Lillo, Norway)

MSc, PhD, and Post-PhD' projects

2019-2020 (USA)	Proteomic and transcriptomic analyses of established engineered high-oil transgenic lines Hunting for ACCase β -CT interactors and investigating their function Genotyping and investigating of oil content for 9 gene leads KiC assay employment to investigate CDPKs and SnRKs interaction network
2012-2016 (Norway)	Investigating the function of Protein Phosphatase 4 (PP4) and its regulators Investigating the PP2A complex in peroxisomes Identification of peroxisomal phosphatases Abiotic stress functions of regulatory B'' subunits of protein phosphatase 2A in Protein phosphatase 2A (PP2A) phosphatase activators
2012-2016 (Norway, PhD)	Investigating the role of peroxisomes in biotic and abiotic stresses Identifying the peroxisomal proteome using bioinformatics and experimental approaches
2006-2008 (Greece)	Identifying Criniviruses RNAi suppressors Complete sequencing and detection of Tomato chlorosis virus

EXPERIMENTAL SKILLS

Plant Biology	Canola, Arabidopsis, Physiology, Virology, Immunity, Transgenics, Organelle biology, organelle crosstalk, Protoplast manipulation, Cell culture, and Tissue culture
Molecular Biology	Nucleic acid purification, Cloning, Gene expression, RNAi, Epigenetics, CRISPR/CAS, Global Transcriptomics, reverse transcription, real-time PCR
Biochemistry	Signaling, Phosphorylation, Recombinant technology, Antibody production and purification, Western and Northern blotting, fatty acid methyl esters (FAMES), Lipid profiling, enzyme assays
Microscopy	Epifluorescence and Confocal microscopy
Mass spectrometry	Protein extraction, phosphopeptide enrichment, Proteomics and Phosphoproteomics, quantitative TMT-labelled and free label omics''
Bioinformatics	Vector Nti, Mega10 and other genetics tools, Applied Bioinformatics, and beginner in R

References**Collaborators and recent job-related:****1- Prof. Gregory Moorhead**

Biological Sciences; University of Calgary, AB, Canada
moorhead@ucalgary.ca; Phone: +1 (403) 220 6238

2- Prof. Douglas Muench

Biological Sciences; University of Calgary, AB, Canada
dmuench@ucalgary.ca; +1 (403) 220-7935

3. Prof. Marcus Samuel

Biological Sciences; University of Calgary, AB, Canada
msamuel@ucalgary.ca; +1 (403) 210-6459

4- Prof. Geir Slupphaug

Dep. of Cancer R. and M. Medicine, NTNU, Trondheim, Norway
geir.slupphaug@ntnu.no; +47 91825455

5- Prof. Jianping Hu

MSU-DOE, East Lansing, MI, USA
huji@msu.edu; +1(517) 432-4620

Studies- and postdoc-related (2006-2015, and 2019/2020 in the USA):**1- Prof. Jay Thelen**

Missouri University, USA
thelenj@missouri.edu
Phone: + 1 573-884-1325

2- Prof. Cathrine Lillo

CORE, University of Stavanger, N-4036 Stavanger, Norway;
cathrine.lillo@uis.no; +47 51831875

3- Prof. Peter Ruoff

CORE, University of Stavanger, N-4036 Stavanger, Norway;
peter.ruoff@uis.no Tel: **+47 51 83 18 87**

4- Dr. Ioannis Livieratos

Research & Studies Coordinator of Sustainable Agriculture
Department/MAICH, Greece

livieratos@maich.gr Tel: **+30 28210 35000**

5- Walter Gassmann

371C Life Sciences Center, Missouri University, Columbia, USA
GassmannW@missouri.edu Tel: **+ 1 573-884-7703**