BIOGRAPHICAL SKETCH
Masha Niv

POSITION TITLE: Full Professor (Tenured), The Institute of Biochemistry, Food and Nutrition, The Robert H Smith Faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem. Homepage [URL] LinkedIn[URL] Google+[URL]

INSTITUTION AND LOCATION	DEGREE	Completion Date	FIELD OF STUDY
Hebrew University, Israel	BSc (cum laude)	06/1994	Chemistry
Hebrew University, Israel	PHD (direct)	02/2001	Theoretical physical chemistry
Keryx Biopharmaceuticals, Jerusalem, Israel	Molecular Modeller	06/2003	Bioinformatics and drug design
Weill Medical College (Cornell University, NY, USA)	Postdoc	08/2005	Computational biomedicine
Weill Medical College (Cornell University, NY, USA)	Instructor	07/2007	Computational biomedicine
Hebrew University, Israel	Lecturer	07/2009	Computational biochemistry
Hebrew University, Israel	Senior lecturer	02/2014	Molecular recognition and chemical senses
Hebrew University, Israel	Associate professor	2014-2021	Molecular recognition and chemical senses
Hebrew University, Israel	Full Professor	current	Molecular recognition and chemical senses

SELECTED POSITIONS AND HONORS
2022 – to date Head of BSc program in Biochemistry and Food Science
2017- 2021 Vice Dean for Research, The Faculty of Agriculture, Food and Environment, The Hebrew U
2019 – to date Board of Directors Member, Israel Institute for Advanced Studies
2022 – to date Editorial Advisory Board, Journal of Chemical Information and Modeling
2022 – to date Executive Editor, Chemical Senses
2022 – to date Tenure and Promotions committee, The Hebrew University
2023-2026 Member of the Executive Committee of the Hebrew University
COST actions management committee member or substitute member (CM1207, CA15135, CA22161)

2010 Krill Prize for Excellence in Science from the Wolf Foundation
2011 Women's League for Israel Senior Lectureship in Nutrition

2017-2018 Vigevani visiting professor to Italy
2018-2019 member of the Israeli "Leadership in Academia" program [URL]
2022 member of 8400 HealthTech network [URL]
2023 Recipient of the The Hebrew University award for outstanding female researchers

Co-founder of GCCR consortium on chemosensory research
Co-founder of GPCRladies repository of women scientists in the GPCR field
Co-founder of WISER mentorship network for Israeli female postdocs
Co-founder of iTranslate via 8400 for PIs interested in translating academic research into industry

RECENT and UPCOMING TALKS (selected)

2022 Gordon Research Conference Computational Chemistry, Castelldefels, Spain
2022 Keynote at European Chemosensory Research Organization (ECRO) Berlin, Germany
2023 Gordon Research Conference Molecular Pharmacology, Les Diablerets, Switzerland
2023 Plenary 13th Wartburg Symposium on Flavor Chemistry & Biology

CONTRIBUTIONS TO SCIENCE

My overall scientific goal is to deepen understanding and modifying signaling processes in chemoreception and metabolism. I draw on my training in theoretical physical chemistry and my subsequent experience in computational biomedicine to gain novel insights relevant to human health and well-being.

Which compounds elicit bitter taste, and how? We used text- and data-mining techniques to compile a database of chemical structures of all compounds known to be bitter. The database, BitterDB, which currently holds 1000 bitter compounds and has **tens of thousands of users** worldwide. The information gathered in **BitterDB** was essential for developing the BitterPredict tool, which classifies molecules into bitter and non-bitter, based on their chemical structure. We also challenged the common paradigm that bitterness role is to signal toxicity. **BitterIntense** was developed recently for prediction of intense bitterness of molecules, and flag the need for reformulation early in drug discovery process. Using an iterative computational-experimental approach we rationally design new bitter taste receptor ligands and developed a tool to match ligands to individual bitter taste receptor subtypes (**BitterMatch**).

Surprising sweet tasting molecules
We validated a homology model-based screening approach for identifying novel sweet-tasting molecules and used this model to rationalize the structure-activity relationship of sweet saponins and to study the lack of stereospecificity of the sweet taste receptors towards glucose **enantiomers**. We were able to solve almost **a century old mystery** regarding the taste of heavy (deuterated) water. We have shown that deuterated water is distinguishable from regular water based on its taste, that it elicits sweet sensation in humans, and it does so via the T1R2/T1R3 sweet taste heterodimer.

Taste and smell loss and recovery in COVID-19 patients
We showed that that self-reported quantitative olfactory changes, either alone or combined with other symptoms, provide a specific tool for clinical diagnosis of COVID-19and characterized the path to recovery of smell and taste loss in mild COVID-19 patients. We found that about 10-15% suffer from smell loss up to 6 months and more and found that **parosmia** (distorted smell) and **phantosmia** (ghost smell) was ~10% of participants during disease but dramatically **increased** at follow up.

Full list of publications [Google Scholar H index 41] URL