

BIOGRAPHICAL SKETCH

DAVID EDWARD SALT, B.Sc. (Hons), M.Sc., Ph.D.
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EDUCATION

- 1981 - 1984** **B.Sc. (Hons) Biochemistry, 1st class with distinction**, University College North Wales, Bangor, U.K.
- 1984 - 1985** **M.Sc. Computer Studies**, Hallam University, Sheffield, U.K.
- 1985 - 1988** **Ph.D.** Thesis Title: **Copper-binding peptides of *Mimulus guttatus***, Supervisor: **DA Thurman**, University of Liverpool, Liverpool, U.K.

POSTDOCTORAL TRAINING

- 1988 - 1990** **Team Leader**, Centre for Biochemical Engineering, University College London, London, U.K.
- 1990 - 1992** **Postdoctoral Scholar**, with **GJ Wagner**, Department of Agronomy, University of Kentucky, Lexington, KY, USA
- 1992 - 1993** **Research Associate**, with **WE Rauser**, Botany Department, Guelph University, Guelph, Ontario, Canada.

EMPLOYMENT HISTORY

- 1993 - 1997** **Assistant Research Professor**, Center for Agricultural Molecular Biology, Rutgers University, New Brunswick, NJ, USA
- 1995 - 1999** **Consultant and member of Science Advisory Board** for Phytotech Inc, Monmouth Junction, NJ, USA
- 1998 - 2000** **Assistant Professor of Biochemistry**, Department of Chemistry, Northern Arizona University, Flagstaff, AZ, USA.
- 2000 - 2004** **Consultant and member of Science Advisory Board** for NuCycle Inc., Monmouth Junction, NJ.
- 2000 - 2001** **Associate Professor of Biochemistry**, Dept of Chemistry, Northern Arizona University, Flagstaff, AZ, USA.
- 2001 - 2005** **Associate Professor of Plant Science**, Dept Horticulture and Landscape Architecture, Purdue University, West Lafayette, IN, USA.
- 2004 - 2007** **Scientific Director for Genomic Research and Technology**, Bindley Bioscience Center, Discovery Park, Purdue University, West Lafayette, IN, USA.
- 2005 - 2011** **Professor of Plant Science**, Dept Horticulture and Landscape Architecture, Purdue University, West Lafayette, IN, USA
- 2010** **Sabbatical** for three months working at the Grattamacco winery during harvest in Italy.
- 2011 - present** **Adjunct Professor of Plant Science**, Dept Horticulture and Landscape Architecture, Purdue University, West Lafayette, IN, USA.
- 2011 - 2016** **Professor and Sixth Century Chair of Plant Science**, School of Biological Sciences, University of Aberdeen, Aberdeen, UK.
- 2012 - 2016** **Founder and co-Director of the Centre for Genome Enabled Biology and Medicine**, University of Aberdeen, Aberdeen, UK. www.abdn.ac.uk/genomics/
- 2016 - 2022** **Professor of Genome-Enabled Biology**, University of Nottingham, Nottingham, UK.
- 2016 - 2022** **Founder and Director, Future Food Beacon of Excellence**, University of Nottingham, Nottingham, UK. www.nottingham.ac.uk/future-food
- 2016 - present** **Trustee & Chair** Williamson Trust.
- 2022 - 2023** **Forum Editor**, New Phytologist, Lancaster, UK. Deliver new Forum strategic development plan.
- 2022 - present** **Professor Emeritus**, University of Nottingham, Nottingham, UK.
- 2022 - present** **Chief Scientific Advisor**, NuKoKo, Guildford, UK. <https://www.nukoko.co.uk/>

HONORS AND AWARDS

- Fellow of the Royal Society of Edinburgh (FRSE), 2014.
- Fellow Society of Biology (FSB), 2013.
- Fellow of the American Association for the Advancement of Science (AAAS), 2011.
- Fellow of the Royal Society of Chemistry (FRSC), 2010.
- The Purdue University Herbert Newby McCoy Award winner, 2010.

- Critiques and Awards Program, Gold Award for Genomics Explorer exhibit, Association for Communication Excellence, 2010.
- First prize Interactive Media Award, Science and Engineering Visualization Challenge, NSF/AAAS, 2008 (Science **321**: 1767-1775 (Sept 2008) for the Genomics Digital Lab (GDL).
- World Summit Awards e-Science & Technology winner for the Genomics Digital Lab (GDL), 2009 <http://www.wsis-award.org/winners/winners.wbp>
- Purdue University Faculty Scholar 2003 – 2008
- Nominated by Nature Biotechnology (March 2006) as one of the “thought leaders and technology pioneers” in biotechnology in the past 10 years (*Nature Biotech* **24**: 291).

COMPETITIVELY FUNDED EXTERNAL RESEARCH GRANTS

Career total (currency converted to GBP) = 38 awards totalling £17.7million

Career total as PI (currency converted to GBP) = 30 awards totalling £14 million

Career total as CoPI (currency converted to GBP) = 8 awards totalling £3.7million

COMPLETED RESEARCH SUPPORT

- *The molecular basis underlying Casparian strip formation in rice and its role in water and solute uptake.* Newton International Fellowship to Dr Yiqun Gao, 01/09/2020 – 31/07/2023, **£101,816**
- *Understanding the molecular biogenesis of Casparian Strips in rice and their roles in regulating rice ionome.* Newton Advanced Fellowship to Prof Daiyin Chao, 31/03/2020 – 31/07/2023, **£74,000**
- *Controlling cadmium uptake and partitioning into cocoa beans in Theobroma cacao.* Mars Wrigley Inc. (PI David E Salt), 01/05/2019 – 31/07/2023, **University of Nottingham £435,032**
- *Revealing the Full Picture: An integrated view of the shoot and root phenomes.* BBSRC USA Partnering Award (PI David E Salt), 01/04/2019 – 01/09/2022, **University of Nottingham £51,021**
- *Synthetic Chocolate.* Mighty Fine Inc., (PI David E Salt), 01/2022 – 12/2022, **£15,000**
- *Controlling cocoa bean fermentation for enhanced chocolate flavour.* Innovate UK Agri-tech Catalyst Colombia (PI David E Salt) in partnership with Luisa's Vegan Chocolates, 01/03/2019 – 28/02/2021, total **£270,646 (University of Nottingham £105,459).**
- *Elucidation of the mechanisms controlling heavy metal accumulation in rice based on ionomics and genomics approaches.* National Science Foundation Council of China (NSFC) International Collaborative Project (PI Fangjie Zhou, Co-I David E Salt), 01/01/2016 – 31/12/2020, **Nanjing Agricultural University ¥3,330,000.**
- *Research Program (SRP) Sources and Protracted Effects of Early Life Exposure to Arsenic and Mercury.* Project 1 *Arsenic uptake, transport and storage in plants.* US National Institute of Environmental Health Sciences (PI Mary Lou Guerinot, Co-PI David E Salt), 01/04/2014 – 31/03/2020, **University of Nottingham £264,127.**
- *MYB36 controls differentiation of the endodermis into an ion-selective barrier.* BBSRC (PI David E Salt), 11/08/2016 – 31/12/2019, **University of Nottingham £514,378.**
- *UK/China Workshop Innovations in Agriculture and Food for Healthy Societies.* Joint British Council & National Science Foundation China (PI David E Salt), 02/2018 – 02/2019, **University of Nottingham £24,000 (Nanjing Agricultural University ¥150,000).**
- *ERA-CAPS: Plant root diffusional barriers: Genesis and implications for nutrient efficiency and stress tolerance.* (PI David E Salt, Co-I Benni Franke, Nico von Wirén, Yann Boursiac, Mark Aarts, Jan K Schjoerring). BBSRC 01/03/2014 – 30/11/2017, Total award €2,075,000, **University of Nottingham £485,024.**
- *Genome-wide association mapping and landscape scale modelling of heritable ionomic diversity in Arabidopsis thaliana populations,* BBSRC (PI David E Salt), 01/09/2013 – 31/12/2017, **University of Nottingham £751,233.**
- *The genetic basis of natural ionomic variation,* US National Institutes of Health (PI David E Salt, CoPIs Mary Lou Guerinot and Charlotte Poschenrieder), 01/04/2011 – 31/03/2017, total award \$1,390,459, **University of Aberdeen subaward £296,646.**
- *Mapping radial ion-transport pathways in plant roots with cell-type specific resolution.* The Leverhulme Trust (PI David E Salt), 01/08/2014 – 31/07/2017, **University of Nottingham £225,631.**
- *The iHUB: A collaborative international network for ionomics,* US National Science Foundation (PI David E Salt, Co-I Mourad Ouzzani), 01/06/2010 – 31/05/2016, **Purdue University \$527,339**
- *ALERT 14: Empowering research with ultra-fast high-throughput genome sequencing on the benchtop.* BBSRC (PI David E Salt, Co-I Elaina Collie-Duguid), 01/10/2014 – 30/09/2015, **University of Aberdeen £529,609**
- *US-Brazilian Rice Ionomics Collaborative (USBRIC),* US National Science Foundation, Developing Country Collaborations in Plant Genome Research (DCC-PGR) (PI David E Salt), 01/08/2008 – 31/07/2015, **Purdue University \$95,500**

- *Ionome to Genome: Mapping the Gene Networks Controlling Nutrient Content in Rice grain*, US National Science Foundation, Plant Genome Research program special creativity extension, (PI David E Salt, CoPI's Mary Lou Guerinot, Shannon Pinson), 09/09/2011 – 31/07/2015, total award \$1,454,950, **University of Aberdeen subaward £351,928**.
- *The genetic basis and adaptive significance of natural ionic variation*, FP7 Marie Curie Career Integration Grant (CIG) (PI David E Salt), 11/08/2011 – 10/08/2015, **University of Aberdeen €100,000**
- *Ionome to Genome: Mapping the Gene Networks Controlling Nutrient Content in Rice grain*, US National Science Foundation, Plant Genome Research program (PI David E Salt, CoPI's Mary Lou Guerinot, Shannon Pinson), 08/14/2007 – 08/13/2012, **Purdue University \$6,680,415**
- *Mechanisms underlying arsenic tolerance and hyperaccumulation in the fern *Pteris vittata**, US National Science Foundation (PI Jody Banks, CoPI David E Salt), 02/15/2009 – 01/31/2012, **Purdue University \$400,000**
- *Cyberinfrastructure to enabled plant adaptation research*, NSF supported iPlant Collaborative (PI David E Salt), 01/01/2011 – 31/3/2012, **Purdue University \$68,005**
- *Tools to Facilitate Collaboration within the Virtual Ionomics Network at ionomicshub.org to Foster Ionomic Discovery*, Purdue University Cyber Center (PI David E Salt, CoPI Ivan Baxter), 01/01/2009 – 12/31/2009, **\$49,000**
- *The Genetic basis of natural ionic variation*, National Institutes of Health (PI David E Salt, CoPI Mary Lou Guerinot, Magnus Nordborg), 01/08/2010 – 12/31/2010, **\$135,175**
- *Arsenic Uptake, Transport and Accumulation in Plants project #9*, National Institutes of Health. This is a Program Project grant lead by PI Joshua Hamilton entitled "Toxic Metals in the Northeast: From Biological to Environmental Implications (Project #9 PI Mary Lou Guerinot, CoPI David E Salt), 04/08 – 03/13, **\$208,690**
- *The Genetic basis of natural ionic variation*, National Institutes of Health (PI David E Salt, CoPI Mary Lou Guerinot, Magnus Nordborg), 03/31/2007 – 03/30/2010, **\$1,086,788**
- *Acquisition of Metabolic Profiling Instrumentation at Purdue*, National Science Foundation, MRI, (PI Clint Chapple, CoPI's David Rhodes, David E Salt, Barry Wanner), 10/01/04 - 09/30/07, Purdue award **\$839,427**.
- *Tools for differential metabolomics*, National Institute of Health Road Map, (PI Fred Regnier, CoPI's Jiri Adamec, Graham Cook, Jo Davisson, John Morgan, Dan Raftery, David E Salt, Barry Wanner), 10/01/04 - 09/30/07, Purdue award \$4,719,117 (Salt budget **\$778,107**).
- *Ionomics*. National Science Foundation, 2010 Project, (PI Guerinot M-L, CoPI's Harper J, Salt DE Schroeder J, Ward J), 9/1/2004 to 8/31/2008, Purdue award **\$1,222,015** (total \$3,490,000).
- *Molecular dissection of arsenic hyperaccumulation in the fern *Pteris vittata** US Department of Energy (PI Banks J, CoPI Salt DE), 9/01/2003 to 8/31/2006, **\$450,000**
- *Center for Phytoremediation Research and Development*. Fund for the 21st Century (PI David E Salt, CoPI Kathy Banks) 07/01/2003 to 06/30/2007, **\$2,000,000**.
- *Monitoring Phytoremediation Processes Using the Green Fluorescent Protein*. Department of Energy, Small Business Technology Transfer Program, Phase II, (PI David E Salt), in partnership with Phytotech Inc., 9/01/2002 to 8/31/2004, \$500,000 Purdue award **\$350,000**.
- *Characterization of potential cesium binding ligands in plant root exudates*. Brookhaven National Laboratory (PI David E Salt), 01/01/2002 to 05/31/2002, **\$15,315**
- *Monitoring Phytoremediation Processes Using the Green Fluorescent Protein*. Department of Energy, Small Business Technology Transfer Program, Phase I (PI David E Salt), in partnership with Phytotech Inc., 9/01/2001 to 6/30/2002, \$99,791.44, Purdue award **\$56,853**.
- *Genome-wide hunt for metal hyperaccumulation genes*. National Science Foundation, Integrative Plant Biology (PI David E Salt), 7/1/2001 to 6/30/2004, **\$450,000**
- *Selenium enriched plant material for chemoprevention*. National Institute of Health, Department of Health and Human Services, National Cancer Institute, Small Business Technology Transfer Program, Phase II (PI David E Salt), in partnership with NuCycle Inc., 5/1/2001 to 5/2/2003, \$399,273 Purdue **\$169,498**
- *Molecular mechanisms of nickel hyperaccumulation in *Thlaspi goesingense**. National Science Foundation, Integrative Plant Biology (PI David E Salt), 6/01/2001 to 5/31/2004, **\$329,807**
- *Gene discovery in aid of plant nutrition, human health and environmental remediation*. National Science Foundation, Plant Functional Genomics (PI Guerinot M-L, CoPI's Schroeder J, Harper J, Eide D, Salt DE), 9/1/2000 to 8/31/2004, Purdue award **\$689,611** (total \$4,414,644).
- *Selenium enriched plant material for chemoprevention*, National Institute of Health, Department of Health and Human Services, National Cancer Institute, Small Business Technology Transfer Program, Phase I (PI David E Salt), in partnership with NuCycle Inc., 1/1/99 to 12/31/2000, **\$100,000**.
- *Molecular dissection of the cellular mechanisms involved in nickel hyperaccumulation in plants*, US Department of Energy (PI David E Salt), 9/15/96 to 01/31/2000, **\$495,938**.

- *Phytofiltration: A novel approach to water treatment using seedlings*, US Department of Agriculture (PI David E Salt), 12/1/96 to 4/30/2000, **\$116,664**.

FUNDED TEACHING GRANTS

COMPLETED RESEARCH SUPPORT

- *Genomics Revolution Uncloaked* American Society of Plant Biologists, Education Foundation (PI David E Salt), 08/01/2005, **\$30,000**
- *Chemistry and genomics-driven drug discovery*. The Camille and Henry Dreyfus Foundation, Inc., Special Grant Program in the Chemical Sciences, 01/27/00, **\$25,199** (PI David E Salt, CoPI with Dr Paul Torrence and Dr Colleen Kelley).
- *A day in the life of a protein- The green fluorescent protein as a laboratory teaching aid*. National Science Foundation, Course, Curriculum and Laboratory Improvement (CCLI) (PI David E Salt), 09/01/99 to 08/31/2001, **\$91, 671** (NAU match of **\$94,524**, providing a total of **\$186,195**).
- John Freeman, Hooper Undergraduate Research Program, Spring 2000, **\$2,191**
- Isaac Shaffer, NASA Space Grant Internship, 1999-2000, **\$2,500**.
- Kenneth Nieman, Hooper Undergraduate Research Program, Spring 1999, **\$1,260**.
- Pam Motley, Achievement Rewards for College Scientists (ARCS) Scholarship, 1998, **\$6,000**.
- Exxon Company travel grant to support speaker participation at the *Phytoremediation* Special Symposium at the *5th International Conference on the Biogeochemistry of Trace Elements*, Vienna, Austria, 1999, **\$1,000**.
- Research Apprenticeship Program for Minority High School Students, 1994, **\$1,975**.

GRADUATE, POSTDOCTORAL AND VISITING RESEARCH SCIENTISTS

• **Graduated Ph.D. Students;**

John Freeman, (H&LA, 2001 – graduated 2004)

Luke Gumaelius (jointly supervised with Prof Jody Banks graduated 2006)

Jeff Gustin (Plant Biology Program, NSF-IGERT Innovation Realization Lab Fellowship [2-year award] 2002 – graduated 2007).

Tommy Sors (H&LA, Council for Biotechnology Information, Young Scientist Award [3 awarded nationwide] 2003 – graduated 2008)

Gun-Nam Na (Plant Biology Program, 2003 – graduated 2009)

Prashant Hosmani (Ross Fellowship [1-year award], H&LA, 2007 – graduated 2012)

Jessica Brazelton (PULSE May 2008 – graduated 2012)

Macarena Silva Guzman (jointly supervised Dr Brain Dilkes – graduated 2015)

Silvia Busoms – Dual Degree Programme University of Aberdeen & Universitat Autònoma de Barcelona (2012 – graduated 2015)

Monika Ewa Mierzwinska (Feb 2012 – graduated 2016)

Joana Teres – Dual Degree Programme University of Aberdeen & Universitat Autònoma de Barcelona (2014 – 2017)

Licida Giuliani (2014 – present)

Sebastian Garcia Daga (2021 – present)

• **M.S. students;**

Pam Motley, (1998 – 2000- graduated 2000)

Matt Mandreat (PULSE May 2008 – 2011)

• **Postdoctoral Students;**

Dr. Xianghe Yan (1996 - 1997)

Dr. Lakhar Sreedhar (1996 - 1997)

Dr. Ute Krämer (NATO Postdoctoral Fellow, 1996 - 1997)

Dr. Mike Persans (1998 - 2002)

Dr Dennis Brunk (2001 – 2003)

Dr Bakhtiyor Yakubov (2001 – 2007)

Dr Mehrzad Mahmoudian (2001 – 2003)

Dr Wendy Peer (2001 – 2003)

Dr Donggiun Kim (2002 – 2005)

Dr Muthukumar Balasubramaniam (2003 – 2009)

Dr Ana Rus (2003 – 2006)
Dr Danielle Ellis (2001 – 2006)
Dr. Ivan Baxter (2004 – 2009)
Dr. Hyeong Cheol Park (2005 – 2008)
Dr. John Danku (2006 – 2011)
Dr. Daiyin Chao (2007 – 2013)
Dr. Monica Borghi (2007 – 2010)
Dr. Xin-Yuan Huang (2010 – 2016).
Dr Takehiro Kamiya (Japan Society for the Promotion of Science Fellow, 2011 – 2013).
Dr Yaling Wang (2012 – 2013).
Dr. Peng Wang (2013 – 2015).
Dr. Ana Atala Lomelo Campos (2014 – 2017).
Dr. Wilhelmus van Dijk (2014 – 2017).
Dr. Guilhem Reyt (2014 - 2021).
Dr. Paulina Flis (2014 - 2017).
Dr. Eduardo Sanchez-Bermejo (2015 - 2018).
Dr. Sina Fischer (2015 – 2019).
Dr. Alice Pita Barbosa (2016 – 2017).
Dr Priya Ramakrishna (2016 – 2018).
Dr David Gopaulchan (2018 – 2022).
Dr Sian Bray (2020 – 2021)
Dr Yiqun Gao (2020 – 2022)

- **Full time Research Technician;**

Jean-Marc Patnoe, (1998 - 1999).
Brett Lahner, (2000 – 2011).
Teresa Thompson (2001 – 2010)
Elena Yakubov, (2004 – 2011)
Marina Tikhonova (2007 – 2009)
Daniel Lou-Hing (2012 – 2012)
Dr John Danku, Ionomics technologist (2011 – 2016)
Holly Mackay (2013 – 2016)
Paulina Flis, Ionomics Technologies (2017 – 2022)

- **Part time Research Technician;**

Carrie Albrecht (2000 – 2001).
Elena Yakubov, (2003 – 2004).
Venugopal Naga Venkata Gudimetla (2002 – 2004).
Marina Tikhonova (2006 – 2007).
Tena Graham (2003 – 2010).
Kamal Swarup (2016 – 2019).

- **Visiting Scientists;**

Dr Danielle Ellis NuCycle Inc., (2002 – 2004).
Carrie Albrecht, Phytotech Inc., (1999 - 2000).
Dr Stephen Ebbs, NSF funded, (summer 2002).
Dr. Thitinun Chotikacharoensuk, Dept of Biology, Mahidol University, Thailand, 2004.
Monica Borghi, Graduate student, Scuola Superiore Sant'Anna, Pisa, Italy (2006).
Dr He Bing, College of Agriculture, Guangxi University, China (2007 – 2008)
Dr Marcelo Loureiro, Departamento de Biologia Vegetal Universidade Federal de Viçosa, Viçosa, Brazil (2005).
Marcelo de Almeida Guimarães – Graduate student, Departamento de Biologia Vegetal Universidade Federal de Viçosa, Viçosa, Brazil (2008)
Adriano Alves da Silva – Graduate student, Universidade Federal do Rio Grande do Sul, Brazil (2009).
Flancer Nunes – Graduate Student, Departamento de Biologia Vegetal Universidade Federal de Viçosa, Viçosa, Brazil (2009).

Ana Carolina A. L. Campos - PhD student, Wageningen University, Botanical Genetics, Netherlands (April – May, 2013).

Dr Christian Hermans - Université Libre de Bruxelles, Belgium (July, 2013).

Chiara Rome – PhD Student, Scuola Superiore Sant'Anna, Pisa, Italy (May – Sept, 2014).

Dr Felipe Ricachenevsky, Universidade Federal do Rio Grande do Sul, Brazil (June – Sept 2010; June – Sept, 2014)

Marco Lolaico, undergraduate student Scuola Superiore Sant'Anna, Pisa, Italy (July – Sept, 2015).

Pranathi Reddy, Newton-Bhabha PhD placement student from Indian Institute of Rice Research, Rajendranagar, Hyderabad, Telangana, India (July – Sept, 2015).

Dr Alice Pita-Barbosa, Federal University of Rio Grande do Sul, Brazil (Aug 2016 – Aug 2017).

Andrea Neri - PhD Student, Scuola Superiore Sant'Anna, Pisa, Italy (March – Aug, 2017).

Flavio Martini - PhD student University of Verona (Sept 2017 – March 2018).

Dr Peiying Xue - Associate Professor of Soil Science, Hebei Agricultural University (Jan – Dec 2022).

UNDERGRADUATE RESEARCH

- New Jersey Discovery Summer Program for underrepresented minorities high school students - 6 (1994 - 1996).
- Rutgers University U.S. undergraduates; Andres Alvarado (1994), Meagan O'Brian (1994-1995), Robin Torquati (1995-1996), Andrew Vassil (George H Cook honours undergraduate scholar, 1997).
- NAU US undergraduates; Isaac N. Shaffer (1998 - 2000), Kenneth S. Nieman (1998 - present), Kelsi Henry (1998 - 1999), Carrie Albrecht (1999), Jessica Wood (1999), John Freeman (1999 - 2001), Lynn Huynh (2000), Michael White (2000 – 2001), Bee Valvo (2000 – 2001).
- NAU International undergraduates; Kin Ging-Wen Hung (Swedish student, 1998), Ben Bubner (German student, 1999), Kristina Herzberg (German student, 1999-2000).
- Purdue undergraduates; Kristi Newhouse (2001 – 2002), Ellen Smith (2002 – 2003), Amanda Jarboe (summer 2002), Dan Garcia (2002 – 2003), Lisa Richey (2003 - 2004), Yelena Dracheva (2004), Jason Hanna (2004 – 2005), Adam Hess (2004 – 2005), Amy Miller (2005), Tonya Beane (2005), Angie Goodman (2006), Josh Welker (2006), Lamothe Thomas (2007), Ji Kwon (2007), Marcy (Marcellina) Lendaro (2008), Travis Studtman (2008), Joanna Manor (2008).
- Aberdeen undergraduates; Federico Caso (2015), Alex Loudon (2015)

INVITED LECTURES (Total of 146 since 1994)

- Gordon Conference, Salt and Water Stress in Plants, Les Diablerets, Switzerland, 22nd – 27th May 2022
- Metallomics2019, Warsaw, Poland, 1 – 2nd July 2019
- Future of Food Symposium, FAO, Rome, Italy, 10 – 11th June 2019
- Purdue University, West Lafayette, Indiana, USA, 20 – 23rd May 2019
- **Keynote**, ICOBTE, Nanjing, China, 5 – 10th May 2019
- Sant'Anna School of Advanced Studies, Pisa, Italy, March 2019
- University of Lausanne, Lausanne, Switzerland, 14th Feb, 2019
- Max Planck Institute of Plant Breeding Research, Cologne, Germany, 24th Oct, 2018
- Pennsylvania State University, Department of Plant Sciences, State College, USA, 11th Oct, 2018
- **Keynote** lecture, 2nd Asia-Pacific Plant Phenotyping Conference, Nanjing, China 23 – 25th March, 2018.
- School of Biological Sciences, University of Birmingham, UK 15th Feb, 2018.
- 2nd Workshop on Plant Development & Drought Stress, Asilomar, Pacific Grove, USA 5-8th Nov, 2017
- Carnegie Institute, Department of Plant Biology, Stanford, USA 3rd Nov, 2017
- Casparian strip as a transport gateway, IPNC, Copenhagen, 21 – 24 Aug, 2017.
- Cadmium accumulation in cocoa, South American Cocoa Producers Cadmium workshop, Peru, June, 2017
- AAAS 2017 annual meeting, Boston, 17th Feb, 2017
- GARNet 'Natural Variation as a Tool for Gene Discovery', Cambridge, UK 12 – 13th Dec, 2016
- Institute of Plant Physiology and Ecology, Shanghai, China, 17th Nov, 2016
- Agricultural University of Nanjing, Nanjing, China, 14th Nov, 2016
- Okayama University, Japan 22 – 26th August, 2016.
- Biometals Conference, Dresden, Germany 10 – 15th July, 2016.
- **Keynote** lecture, Soil and Water Bioremediation, Pisa, Italy, 9th June, 2016

- Integrating large data into the Plant Sciences, Totnes, Devon, 21 – 22nd April, 2016
- University of Lausanne, Lausanne, Switzerland, 7th April, 2016
- **Keynote** lecture, Cost Action 'Network for the Biology of Zinc', Sofia, Bulgaria, 22 – 23rd March, 2016 – **cancelled**.
- 'Frontier Leader' seminar ITQB, Lisbon, 3rd March, 2016 - **cancelled**
- Botanical Colloquium University of Bonn, Germany 14th Jan, 2016
- Wageningen University, graduate school Experimental Plant Sciences, 27th Oct, 2015
- Missouri Botanical Gardens & Danforth Plant Science Center Fall Symposium, St Louis USA, 8 – 10th Oct, 2015.
- The Genome Analysis Center (TGAC) Science Symposium, 16th Sept, 2015.
- Plant Apoplastic Diffusion Barriers, Nantes, 3rd Sept, 2015.
- ICAR workshop 'Ionomics: bringing systems analysis of plant mineral nutrition from Arabidopsis to crops', Paris, 5th July, 2015.
- The Rank Prize Funds Cereal Genomics to Address Grand Challenges, Grasmere, UK, 18 – 21st May, 2015.
- Institute of Plant Physiology and Ecology, Shanghai, China, 15th May, 2015
- iHUB international meeting, Nanjing Agricultural University, Nanjing, China, 12 – 14th May, 2015.
- University of Amsterdam, 'Green Life Sciences' seminar series, 23rd Oct, 2014.
- University of Cambridge, Plant Science Department, 2nd Oct, 2014.
- **Plenary lecture**, Plant Nutrition Conference, German Society of Plant Nutrition, University of Halle, Germany, Sept, 2014.
- **Keynote**, BNASS / Trace Spec, University of Aberdeen, 1 Sept, 2014.
- Gatsby Plant Science Summer School, 2nd July, 2014.
- University of Warwick, School of Life Sciences, 20th June, 2014.
- CNRS Institute of Plant Sciences, Gif-sur-Yvette, France 25-26th March, 2014
- Gatersleben Lecture, Institute of Plant Genetics and Crop Plant Research - IPK Gatersleben, Germany, 20th March, 2014.
- University of Oxford, Department of Plant Sciences. 6th March, 2014.
- Integrative Plant Biology Institute, INRA-Montpellier, 14th Nov, 2013.
- Symposium Plant Diffusional Barriers: From Biosynthesis to Function, University of Lausanne, Lausanne, Switzerland, 5-6th Sept, 2013.
- **Plenary lecture** Iberian Congress of Plant Physiology, Lisbon, Portugal, 26th July, 2013.
- 4th International Symposium on Metallomics, Oviedo, Spain 9th July, 2013.
- Zinc-UK, Aberdeen, 4th July, 2013
- University of Stirling, 3rd June, 2013
- **Keynote**, UK Plant Phenomics Network, Dundee, 15th April, 2013.
- University of Nottingham, 6th March, 2013
- University of York, 19th Feb, 2013.
- Gregor Mendel Institute of Molecular Plant Biology, Vienna, Austria, 26 Nov, 2012.
- University of Glasgow, 13 Nov, 2012.
- **Keynote** COST action FA0905 Mineral -Improved Crop Production for Healthy Food and Feed, Lisbon, Portugal, 24th Oct, 2012
- Nutrient Efficiency in Crops Workshop, Durham University, 13th July 2012
- **Keynote** 16th International Symposium on Iron Nutrition and Interactions in Plants, Amherst, USA, 17 June, 2012.
- North Carolina Plant Molecular Biology Consortium, North Carolina, USA, 23 April, 2012.
- James Hutton Institute, Dundee, UK, Feb 2012.
- **Keynote**, Plant Biotech Denmark, University of Copenhagen, Denmark, 2 Feb, 2012.
- University of Lausanne, Switzerland, Dec 2011.
- Russell Lecture, Rothamsted, UK, 21 Nov, 2011.
- Next Generation Plant Ecology and Evolution, Edinburgh Botanic Gardens, Edinburgh, UK, 19 Oct, 2011.
- Autonomus University of Barcelona, BioCluster, 10 Oct, 2011.
- Plant Nutrition Research (BIONUT-ITN), University of Padova, Italy, 27 – 28 Sept, 2011
- Botanical Congress, Keynote, Berlin, Germany, Sept 18 – 23, 2011.

- ASPB Plenary Session in "Harvesting Biological and Biochemical Diversity", Aug 6 – 10, 2011.
- Gordon Research Conference Cell Biology of Metals, July 31 – Aug 5, 2011.
- 4th International IUPAC Symposium, University of Aberdeen, Aberdeen, June 2011
- Harvard Plant Biology Symposium, "The Genetics of Adaptation," May 5, 2011.
- Federation of European Societies of Plant Biology, Valencia, Spain, July 2010.
- Gordon Research Conference, Environmental Bioinorganic Chemistry, June 2010.
- 12th World Congress of the International Association for Plant Biotechnology, St Louis, June 2010.
- Monsanto, Mystic, CT, April 2010.
- University of Aberdeen, Aberdeen, Scotland, March, 2010.
- National University of Mexico, Cuernavacas, Mexico, October, 2009.
- Redox Biology Center, University of Nebraska – Lincoln, Sept 2009.
- Plant and Crop Science Division, University of Nottingham, Sutton Bonington Campus, UK, Sept 2009.
- 2nd Sulphyton Meeting on Plant Sulfur Research, University of East Anglia, Norwich, UK, Sept 2009.
- International Plant Nutrition Colloquium, Sacramento, CA, Aug 2009.
- Series of three seminars at the University of Tokyo, April 13-15, 2009.
- Networks and Complex Systems Spring 2009 Talk Series, Indiana University, February 2009.
- Arsenic: Unraveling its metabolism and speciation in plants. 20th New Phytologist Symposium, Aberdeen, June 2008.
- Trace Element Micronutrients: Integrating Basic and Applied Research. FASEB summer research conference, Colorado, June 2008.
- John Innes Center, Norwich, May 2008.
- University of Florida, Gainesville, Florida, Mar 2008.
- Zhejiang University, Hangzhou, China, Nov 2007.
- HarvestPlus – Rice, Bangkok, Thailand, Nov 2007.
- Plant Genome European Meeting (GEM), Tenerife, Spain, Oct 2007.
- Congress of Brazilian Society of Plant Physiology, Gramado, Brazil, Sept 2007.
- Sant'Anna School of Advanced Studies, Pisa, Italy, June 2007.
- Society of Experimental Biology, Glasgow, UK, Apr 2007.
- University of Agricultural Sciences, Bangalore, India, Mar 2007.
- Johns Hopkins, Baltimore Jan 2007.
- Dartmouth College, Hanover, Oct 2006.
- Sulfur-containing defense compounds: Pivotal players in plant stress tolerance. Heidelberg Institute of Plant Sciences, Heidelberg, Germany, Oct 2006.
- Annual Meeting of the Max Planck Institute for Molecular Plant Physiology, Golm, Germany, June 2006.
- 6th International Symposium on Speciation of Elements in Biological, Environmental and Toxicological Sciences, Bialowieza National Park, Poland, June 2006.
- Pan American Plant Membrane Biology, South Padre, TX, May 2006.
- University of Massachusetts, Amherst, Nov 2005
- University of Colorado, Fort Collins, Nov 2005
- ComBio 2005, Adelaide, Australia, Sept 2005.
- XV International Plant Nutrition Colloquium, Beijing, China, Sept 2005.
- Plant Stress Signaling Symposium, Gyeongsang National University, Jinju, Korea, May 2005.
- 22nd Annual Missouri Symposium: Genomics & Beyond: Frontiers in Plant Biology, University of Missouri-Columbia, Columbia, MO, April 2005.
- University of Massachusetts, Amherst, MA, March 2005
- University of South Carolina, Columbia, South Carolina, Dec 2004.
- Savannah River Ecology Laboratory, Aiken, South Carolina, Dec 2004.
- University of Illinois, Plant Biology, Urbana-Champaign II, Oct 2004.
- Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) annual meeting, Portland, Oct 2004.
- University of Kentucky, Plant Physiology Program, Lexington KY, Sept 2004.

- Human Nutrition Research Center, ARS, Grang Forks, ND, May, 2004.
- Delaware Biotechnology Institute, Newark, DE, April 2004.
- Plant Biology Seminar Series, Cornell University, Ithaca, NY, April, 2004.
- Calcium Workshop, San Antonio, TX, March 2004.
- 1st Pan-American Plant Membrane Biology Workshop, Innovation lecture, Cuernavaca, Mexico, May 28th – June 1st, 2003
- US EPA International Applied Phytotechnologies Conference, Chicago, II Mar 2003.
- NuCycle Therapy Inc., Science Advisory Board Meeting, New Jersey, Aug 2003.
- Workshop on Tools for Environmental Cleanup: Engineering Plants for Phytoremediation, University of Washington, Seattle, Jan 2003.
- Institute for the Prevention of Cancer, New York, Aug 2003
- Plant Biology Graduate Program Seminar Series, University of California, Davis, Nov 2002.
- Plant and Environmental Sciences and Ecology and Evolution Seminar Series, University of California, Davis, Nov 2002.
- Fourth Annual Symposium “Altering Plant Metabolism to Improve Human and Animal Nutrition”, Danforth Plant Science Center, St. Louis, Missouri, Oct 2002.
- Midwest Rhizosphere Research Symposium, Danforth Plant Science Center, St. Louis, Missouri, Oct 2002.
- New Phytologist Symposium “Effect of heavy metals on plants”, Philadelphia, Sept 2002.
- Metallophytes, Mine Waste and Land Reclamation, Royal Botanic Gardens Kew, London, UK, July 2001.
- Rothamsted Experimental Station, Harpenden, UK, July 2001.
- *American Society of Plant Biologists Annual Meeting*, Mini-Symposium, *Membrane Transport*, Providence, Rhode Island, USA, July 2001.
- *In vitro Biology*, Special Symposium *Phytoremediation*, San Diego, July 2000.
- *American Society of Plant Physiologists Annual Meeting*, Mini-Symposium *Remediation*, Baltimore, MD, USA, July 24-28, 1999.
- *5th International Conference on the Biogeochemistry of Trace Elements*, Special Symposium *Phytoremediation*, Vienna, Austria, July 11-15, 1999.
- *4th IBC Annual International Conference on Phytoremediation*, Toronto, Canada, June 23-25, 1999.
- *Biology Seminar Series*, Biology Department, University of New Mexico, NM, USA, Nov 19th, 1998.
- *Plant Biology Seminar Series*, Plant Science Department, Cornell University, NY, USA, April 3, 1998.
- Rensselaer Polytechnic Institute, NY, USA, Nov 5, 1997.
- **Keynote** Speaker, *Application of X-ray Absorption Spectroscopy in Monitoring, Understanding, and Improving Phytoremediation*, Stanford Synchrotron Radiation Laboratory, Stanford, CA, USA, October 15, 1997.
- *24th Annual SSRL Users’ Conference*, Stanford, CA, USA, October 16-17, 1997
- *4th International Conference on the Biogeochemistry of Trace Elements*, Special Symposium *Phytoremediation*, University of California, Berkeley, CA, USA, June 23-26, 1997.
- *Biology Seminar Series*, Biology Department, University of California, Santa Cruz, CA, USA, May 1996.
- *Chemistry Seminar Series*, Chemistry Department, Northern Arizona University, Flagstaff, AZ, USA, Sept 1996.
- *1st IBC Annual International Conference on Phytoremediation*, Washington, DC, USA, May 8-10, 1996.
- *Current Topics in Plant Biochemistry, Physiology and Molecular Biology*, University of Missouri, MO, USA, April 19-22, 1995.
- Center for Research into Environmental Signal Transduction, Western Michigan University, Kalamazoo, MI, USA, Feb, 1995.
- *International Symposium on Resource Conservation and Environmental Technologies in Metallurgical Industries*, Toronto, Ontario, Canada, Aug 20-25, 1994.
- Phytotech Inc., Science Advisory Board Meetings, Monmouth Junction, NJ, USA, Dec 1994, June and Dec 1995, June and Nov 1996, and Mar 1997.

OTHER RESEARCH RELATED ACTIVITIES

- Interviewed about my research on the Zip-FM radio station based in Nagoya, Japan, 1998.
- Interviewed by United Press International and The Associated Press, 1998.
- Interviewed by *Science*, and *New Scientist*, 1998

- Interviewed by *Nature*, and *Christian Science Monitor*, 2001.
- Interviewed live on CNN, 2001
- Exhibit of Salt laboratory work focusing on phytoremediation titled “From Brown Fields to Green Fields”, Indiana State Museum, Nov 2002 – May 2003, Indiana State Fair, Aug 2003, and Indiana Farm Progress Show, Sept 2003.
- Bob Hill “HomeGrown” radio show, WFPL, Louisville NPR, April 2004.
- Developed the Genomics Explorer 2,000 sq ft informal science education exhibit displayed at Indiana State Fair, Aug 2007 – 2008, Owensboro Science Museum, KY 2009, Danville Science Center in Danville, Virginia 2010, East Kentucky Science Center in Prestonsburg, KY 2010, Science Central, FortWayne, IN 2013; Bluedorn Science Imaginarium, Waterloo IA 2014.
- The Partnership for Research and Education in Plants, ‘*Interactive Scientist*’
http://www.prep.biochem.vt.edu/prepdb/pathogen_race/
- Genomics Digital Lab (GDL) Project
http://my.aspb.org/members/group_content_view.asp?group=80400&id=100258
- Radio broadcast interview on rice ionomics for NPR Earth and Sky, July 2008
- Interviewed on BBC 4 radio Farming Today, 10th Jan, 2013.
- Gatsby Plant Science Summer School ‘Big Data’ Lecture, 2nd July 2014
http://www.tree.leeds.ac.uk/tree/uploads/Lectures/Salt_D_SS14/video.html
- Bob Hirshon, Host/Producer, AAAS Science Update on talk/news radio stations nationwide, and on the national program “America in the Morning.”, Feb 2017. <http://www.scienceupdate.com/2017/02/arsenic/>
- Press conference AAAS annual meeting on Session ‘Arsenic in Food: From Soil to Plate to Policy’, 17th Feb 2017
- Interviewed BBC Radio Nottingham, Chocolate Week and Colombia cocoa project, Oct 2019
- Presentation at Foreign and Commonwealth Office, Colombian cocoa project chocolate tasting, Dec 2019
- Interviewed BBC East Midlands Today show, Colombian cocoa project, Dec 2019

UNIVERSITY SERVICE ACTIVITIES

Northern Arizona University

- Analytical Chemistry Faculty search committee, 1998.
- Chemistry Department Chair search committee, 1998-1999.
- Radiation Safety committee, 1999-2001.
- Biology/Biochemistry building, various *ad hoc* committees, 1998-2001.
- Chemistry Chair’s Advisory Committee, 1999-2001.
- Department Faculty Status Committee 2000-2001.

Purdue University

- Department graduate program committee 2001- 2005
- Department curriculum committee 2001- 2005
- Department seminar committee 2001 - 2005
- Member of Dr Tesfaye Mengiste Tenure and Promotions Advisory Committee, 2003 –
- Member of Trask Innovation Committee, 2003 – present.
- Faculty search committee, Botany and Plant Pathology, 2003.
- Faculty search committee, Biochemistry, 2003.
- Faculty search committee, H&LA, 2003.
- HLA Leadership Review Committee, 2003.
- PULSe Executive committee, 2004 – 2005.
- Purdue Campus Grievance Steering Committee, 2005 – 2007.
- Bindley Bioscience Center, Director Search Committee 2007.
- CRS Director Search Committee 2007.
- Faculty search committee, Statistics & Agriculture 2006 – 2007.
- Chair faculty search committee, HORT 2007 - 2008.

University of Aberdeen

- School of Biological Sciences Research Excellence Framework committee, 2011 – 2013.

- Founder and Co-Director Centre for Genome-Enabled Biology and Medicine, 2012 – 2016.
- Founder and Co-Chair Sixth Century Forum – University College of Experts, 2014 – 2016.

University of Nottingham

- Founder and Director Future Food *Beacon of Excellence*, 2016 – 2022
- Asia Research Institute Academic Board, 2019 – 2022
- Programme review of Green Chemicals Beacon of Excellence, Nov 2019
- University Research Strategy Steering Group, 2020 – 2022
- UK Advisory Board China Beacons Institute, 2020 – 2021
- International Research and Knowledge Exchange strategy development – Special 12 month project for PVC R&KE (Jessica Corner)

TEACHING

Northern Arizona University

- Introductory Chemistry (CHM 151) – 1 semester
- Fundamental Biochemistry (CHM 360) – 4 semesters
- Biochemistry (CHM 460) – 1 semester
- Fundamental Biochemistry Laboratory (CHM 360L) – 6 semesters (2 sections each semester)

Purdue University

- Plant Physiology (HORT 301) – Fall 2003
- Planning and Presenting Horticulture Research (HORT 601) – Fall 2008, Fall 2009, Fall 2010

University of Aberdeen

- Biology for Undergraduates BI1006 (Autumn 2012, Spring 2015)
- Biological Topics in Plant and Soil Science BI25P2 (Spring 2012, 2013, 2014, 2015, 2016)
- Plant-Environment Interactions PL3504 (Spring 2013, 2014, 2015, 2016)

University of Nottingham

- Intro Basic Omics C135P3 D24007 (1 three hour lecture, Autumn 2016, 2017)
- The Green Planet D224P9 (1 three hour lecture, Spring 2018, 2019)

PROFESSIONAL SERVICE ACTIVITIES

Publishing

- Reviewed manuscripts for multiple journals including Nature, Science, Nature Biotechnology, Proceedings of the National Academy of Science USA, Plant Journal, Plant Cell, Plant Physiology, New Phytologist, Physiologia Plantarum, Planta, Plant and Soil, Plant Cell and Environment, Journal of Experimental Botany, Environmental Science and Technology, Current Biology, eLIFE, Nature Plant, etc.
- Reviewed grants for multiple agencies including US DOE, USDA, US NSF, BBSRC, NERC, Royal Society, ERC, Natural Sciences and Engineering Research Council of Canada.
- Editorial Board Member, International Journal of Phytoremediation, 2003 – 2009.
- Editorial Board Member, BMC Plant Biology, 2004 – 2007.
- Editorial Board Member, Metallomics 2008 – 2014.
- Editorial Board Member, Plant and Cell Physiology, 2011 - 2014
- Editorial Board Molecular Plant, 2012 – present.
- Monitoring Editor, Plant Physiology 2005 – 2011.
- Member Faculty of 1000 Editorial team, 2010 – 2016.

Research Funding

- Member of the DOE grants review panel, 1997.
- Member of the USDA SBIR grants review panel, 2001.
- Member of the DOE Energy Bioscience grant review panel, 2002.
- Member of the NSF Integrative Plant Biology grant review panel, 2002.
- Member of the Royal Society's Research Grant Scheme Panel, Jan 2014 – Dec 2016.
- Member of the BBSRC grant panel, 2014, 2015, 2016.
- Member of the BBSRC GCRF grant panel, 2017.

- Member of a joint BBSRC/NERC grant panel 2015.
- Member of the BBSRC/NERC Newton Fund China, Philippines, Thailand & Vietnam grant panel, Hanoi 2015

Professional organisation service

- Stanford Synchrotron Radiation Laboratory (SSRL) Users Organization Executive Committee, 1998-1999.
- ASPB Education Committee member 2003 – 2007.
- ASPB Committee on Public Affairs 2007 – 2009.
- PlantingScience Steering Committee (<http://www.plantingscience.org/>), 2007 – 2009.
- Chair Plant Science Opportunities Team, iPlant (<http://www.iplantcollaborative.org/>), 2009 – 2010.
- GARNet advisory committee (<http://www.garnetcommunity.org.uk/>), 2012 – 2016.
- Chair GARNet advisory committee, 2014 – 2016.
- Gatsby Plant Science Network Mentor, 2014 – 2016.
- Presented on behalf of ASPB at the Coalition for National Science Funding, 11th Annual Exhibit and Reception, Rayburn House Office Building, Washington DC, June 2005

Scientific meetings

- Technical committee member and Phytoremediation symposium organizer, *5th International Conference on the Biogeochemistry of Trace Elements*, Vienna, Austria, 1998-1999.
- Organizer of iPlant Adaptation workshop, 2008.
- Co-organizer iPlant 2010 Conference, Las Vegas, May 2010.
- Organizer of New Phytologist sponsored workshop 'Ecological and Evolutionary Genomics of Plant Adaptation', Aberdeen, June 2012.
- Organizer of the 1st iHUB workshop, Donald Danforth Plant Science Center April 26 – 27, 2012.
- Organizer of the 2nd iHUB workshop, Nanjing Agricultural University May 18 – 20, 2015.
- Organizer GARNet sponsored symposium 'Natural genetic variation as a tool for gene discovery and crop improvement', Cambridge University Dec 12 – 13, 2016.

Programme Review

- Cocoa Research Centre Quality Assurance Review, Nov 27th – 1st Dec 2017

PATENTS

- **Salt DE**, Takehiro K (2015) Transcription factors and uses thereof. Patent pending **GB No. 1505884.5**.
- **Salt DE**, Ensley BD, Orser C (2006) Nutritional supplements containing methylselenocysteine. **US Patent Number 7,691,429**.
- **Salt DE**, Ensley BD, Orser C (2005) Methods for accumulating selenium in edible Brassica. **US Patent Number 6,958,435**.
- **Salt DE**, Raskin I, Kumar NBA, Douchenkov S (1999). Conversion of metal oxidation states by phyto-reduction, **US Patent Number 5,928,406**.
- Chet I, **Salt DE**, Blaylock M, Raskin I (1998). Microbial isolates promote phyto-remediation. **US Patent Number 5,809,693**.

PUBLICATION LIST

Peer Reviewed Journals and Invited Book Chapters

Last updated 17/05/2023 Google Scholar

Total citations: 43,494

h-index: life time = 96

i10-index: life time = 191

*** Co-corresponding authors**

Top Ten Career Highlight Senior/Joint Senior Author Publications

- Gao Y-Q, Huang J-Q, Reyt G, Song T, Love A, Tiemessen D, Xue P-Y, Wu W-K, George MW, Chen X-Y, Dai-Yin Chao D-Y, Castrillo G, **Salt DE** (2023). A dirigent protein complex directs lignin polymerization and assembly of the root diffusion barrier. *Science* 383(6669): 464 - 471.
- Reyt G, Ramakrishna P, Salas-González I, Fujitac S, Loved A, Tiemessend D, Lapierre C, Morreel K, Polancoh CP, Flis P, Geldner N, Boursiac Y, Boerjan W, George MW, Castrillo G and **Salt DE** (2021) Two chemically distinct root lignin barriers control solute and water balance. *Nature Commun.* 12: 2320.
- Reyt G, Chao Z, Flis P, Salas-González I, Castrillo G, Chao DY, **Salt DE** (2020). Uclacyanin proteins are required for lignified nanodomain formation within Casparian strips. *Curr Biol.* 30(20):4103-4111.

- Publisher commissioned commentary by Stöckle and Vermeer (2020). Journey to the center of the Casparian strip. *Curr Biol.* 30: R1256 – R1281.
- Busoms S, Paajanen P, Marburger S, Bray S, Huang X-Y, Poschenrieder C, Yant L, and **Salt DE** (2018). Fluctuating selection on migrant adaptive sodium transporter alleles in coastal *Arabidopsis thaliana*. *Proc Natl Acad Sci USA.* 115:12443-12452.
- Huang XY, Deng F, Yamaji N, Pinson SR, Fujii-Kashino M, Danku J, Douglas A, Guerinot ML, **Salt DE**, Ma JF (2016). A heavy metal P-type ATPase OsHMA4 prevents copper accumulation in rice grain. *Nat Commun.* 7:12138.
- Kamiya T, Borghi M, Wang P, Danku JM, Kalmbach L, Hosmani PS, Naseer S, Fujiwara T, Geldner N, **Salt DE** (2015). The MYB36 transcription factor orchestrates Casparian strip formation. *Proc Natl Acad Sci USA.* 112: 10533 – 10538. **Faculty of 1000 (2 stars)**.
 Publisher commissioned commentary by Rochus Benni Franke (2015) Casparian's conductor. *Proc Natl Acad Sci USA* 112: 10084-10085
- Hosmani PS, Kamiya T, Danku J, Naseer S, Geldner N, Guerinot ML, **Salt DE** (2013). Dirigent domain-containing protein is part of the machinery required for formation of the lignin-based Casparian strip in the root. *Proc Natl Acad Sci USA.* 110:14498-503.
 Publisher commissioned commentary by Claire Haplin (2013) Cell Biology: Up Against the Wall. *Current Biology* 23: R1048 - 1050
- Chao DY, Dilkes B, Luo H, Douglas A, Yakubova E, Lahner B, **Salt DE** (2013). Polyploids Exhibit Higher Potassium Uptake and Salinity Tolerance in Arabidopsis. *Science* 341:658-9. **Faculty of 1000 (8 stars)**.
- Baxter IR, Vitek O, Lahner B, Muthukumar B, Borghi M, Morrissey J, Guerinot ML, **Salt DE** (2008) The leaf ionome as a multivariable system to detect a plant's physiological status. *Proc Natl Acad Sci USA* 105: 12081-12086. **Faculty of 1000 (2 stars)**.
- Lahner B, Gong J, Mahmoudian M, Smith EL, Abid KB, Rogers EE, Guerinot ML, Harper JF, Ward JM, McIntyre L, Schroeder JI, **Salt DE** (2003) Genomic scale profiling of nutrient and trace elements in *Arabidopsis thaliana*. *Nature Biotechnology*, 21: 1215-1221. **Faculty of 1000 (3 stars)**.
 Publisher commissioned commentary by Rea PA (2003) Ion genomics. *Nature Biotech* 21: 1149-1151; Hirschi KD (2003) Strike while the ionome is hot: making the most of plant genomic advances. *Trends Biotechnol* 21: 520-521.

Full Career Publication List

187. Gao Y-Q, Huang J-Q, Reyt G, Song T, Love A, Tiemessen D, Xue P-Y, Wu W-K, George MW, Chen X-Y, Dai Yin Chao D-Y, Castrillo G, **Salt DE** (2023). A dirigent protein complex directs lignin polymerization and assembly of the root diffusion barrier. *Science* 383(6669): 464 - 471.
186. Song T, Tian YQ, Liu CB, Gao YQ, Wang YL, Zhang J, Su Y, Xu LN, Han ML, **Salt DE**, Chao DY (2023). A new family of proteins is required for tethering of Casparian strip membrane domain and nutrient homeostasis in rice. *Nat Plants.* 9(10):1749-1759.
185. Busoms S, Pérez-Martín L, Terés J, Huang XY, Yant L, Tolrà R, Salt DE, Poschenrieder C (2023). Combined genomics to discover genes associated with tolerance to soil carbonate. *Plant Cell Environ.* 2023 Aug 11. doi: 10.1111/pce.14691. Epub ahead of print. PMID: 37565316.
<https://onlinelibrary.wiley.com/doi/epdf/10.1111/pce.14691>
184. Giehl RFH, Flis P, Fuchs J, Gao Y, **Salt DE**, von Wirén N (2023). Cell type-specific mapping of ion distribution in *Arabidopsis thaliana* roots. *Nat Commun.* 14(1):3351. doi: 10.1038/s41467-023-38880-0.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10264424/pdf/41467_2023_Article_38880.pdf
183. Gonin M, Salas-González I, Gopaulchan D, Frene JP, Roden S, Van de Poel B, **Salt DE**, Castrillo G (2023). Plant microbiota controls an alternative root branching regulatory mechanism in plants. *Proc Natl Acad Sci U S A.* Apr 11;120(15):e2301054120. doi: 10.1073/pnas.2301054120. Epub 2023 Apr 3. PMID: 37011213.
<https://www.pnas.org/doi/epdf/10.1073/pnas.2301054120>
182. Fischer S, Flis P, Zhao FJ, **Salt DE** (2022). Transcriptional network underpinning ploidy-related elevated leaf potassium in neo-tetraploids. *Plant Physiol.* 190(3): 1715 – 1730.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9614460/pdf/kiac360.pdf>
181. Wang Y, **Salt DE**, Koornneef M, Aarts MGM (2022). Construction and analysis of a *Noccaea caerulea* TILLING population. *BMC Plant Biol.* 2022 Jul 22;22(1):360.
<https://bmcpantbiol.biomedcentral.com/track/pdf/10.1186/s12870-022-03739-x.pdf>
180. Tergemina E, Elfarargi AF, Flis P, Fulgione A, Göktay M, Neto C, Scholle M, Flood PJ, Xerri SA, Zicola J, Döring N, Dinis H, Krämer U, **Salt DE**, Hancock AM (2022). A two-step adaptive walk rewires nutrient transport in a challenging edaphic environment. *Sci Adv.* 8(20):eabm9385.
<https://www.science.org/doi/pdf/10.1126/sciadv.abm9385>
179. Alcock TD, **Salt DE**, Wilson P, Ramsden SJ (2022). More sustainable vegetable oil: Balancing productivity with carbon storage opportunities. *Sci Total Environ.* 829:154539
<https://www.sciencedirect.com/science/article/pii/S0048969722016321?via%3Dihub>
178. Calvo-Polanco M, Ribeyre Z, Dauzat M, Reyt G, Hidalgo-Shrestha C, Diehl P, Frenger M, Simonneau T, Muller B, **Salt DE**, Franke RB, Maurel C, Boursiac Y (2021). Physiological roles of Casparian strips and suberin in the transport of water and solutes. *New Phytol.* 232(6):2295-2307.
<https://nph.onlinelibrary.wiley.com/doi/epdf/10.1111/nph.17765>

177. Gorelova V, Colinas M, Dell'Aglio E, Flis P, **Salt DE**, Fitzpatrick TB (2021). Phosphorylated B6 vitamer deficiency in SALT OVERLY SENSITIVE4 mutants compromises shoot and root development. *Plant Physiol.* doi:10.1093/plphys/kiab475. Epub ahead of print. PMID: 34730814.
176. Ricachenevsky FK, Punshon T, **Salt DE**, Fett JP, Guerinot ML (2021). *Arabidopsis thaliana* zinc accumulation in leaf trichomes is correlated with zinc concentration in leaves. *Sci Rep.* 11(1):5278. <https://www.nature.com/articles/s41598-021-84508-y.pdf>
175. Shukla V, Han JP, Cléard F, Lefebvre-Legendre L, Gully K, Flis P, Berhin A, Andersen TG, **Salt DE**, Nawrath C, Barberon M (2021). Suberin plasticity to developmental and exogenous cues is regulated by a set of MYB transcription factors. *Proc Natl Acad Sci U S A.* 118(39):e2101730118. <https://www.pnas.org/content/pnas/118/39/e2101730118.full.pdf>
174. Lee S, Lee J, Ricachenevsky FK, Punshon T, Tappero R, **Salt DE**, Guerinot ML (2021). Redundant roles of four ZIP family members in zinc homeostasis and seed development in *Arabidopsis thaliana*. *Plant J.* 108(4):1162-1173.
173. Pascut FC, Couvreur V, Dietrich D, Leftley N, Reyt G, Boursiac Y, Calvo-Polanco M, Casimiro I, Maurel C, **Salt DE**, Draye X, Wells DM, Bennett MJ, Webb KF (2021). Non-invasive hydrodynamic imaging in plant roots at cellular resolution. *Nat Commun.* 12(1):4682. <https://www.nature.com/articles/s41467-021-24913-z.pdf>
172. Konečná V, Bray S, Vlček J, Bohutínská M, Požárová D, Choudhury RR, Bollmann-Giolai A, Flis P, **Salt DE**, Parisod C, Yant L, Kolář F (2021). Parallel adaptation in autopolyploid *Arabidopsis arenosa* is dominated by repeated recruitment of shared alleles. *Nat Commun.* 12(1):4979. <https://www.nature.com/articles/s41467-021-25256-5.pdf>
171. Busoms S, Terés J, Yant L, Poschenrieder C, **Salt DE** (2021). Adaptation to coastal soils through pleiotropic boosting of ion and stress hormone levels in wild *Arabidopsis thaliana*. *New Phytol.* 232(1):208-220. <https://nph.onlinelibrary.wiley.com/doi/epdf/10.1111/nph.17569>
170. Durr J, Reyt G, Spaepen S, Hilton S, Meehan C, Qi W, Kamiya T, Flis P, Dickinson HG, Feher A, Shivshankar U, Pavagadhi S, Swarup S, **Salt D**, Bending GD, Gutierrez-Marcos J (2021). A Novel Signaling Pathway Required for *Arabidopsis* Endodermal Root Organization Shapes the Rhizosphere Microbiome. *Plant Cell Physiol.* 62(2):248-261. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8112839/pdf/pcaa170.pdf>
169. Alcock TD, Thomas CL, Lochlainn SÓ, Pongrac P, Wilson M, Moore C, Reyt G, Vogel-Mikuš K, Kelemen M, Hayden R, Wilson L, Stephenson P, Østergaard L, Irwin JA, Hammond JP, King GJ, **Salt DE**, Graham NS, White PJ, Broadley MR (2021) Magnesium and calcium over-accumulate in the leaves of a schengen3 mutant of *Brassica rapa*. *Plant Physiol.* 186(3):1616-1631. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8260142/pdf/kiab150.pdf>
168. Reyt G, Ramakrishna P, Salas-González I, Fujitac S, Loved A, Tiemessend D, Lapierre C, Morreel K, Polanco CP, Flis P, Geldner N, Boursiac Y, Boerjan W, George MW, Castrillo G and **Salt DE** (2021) Two chemically distinct root lignin barriers control solute and water balance. *Nature Commun.* 12: 2320. <https://www.nature.com/articles/s41467-021-22550-0.pdf>
167. Liu H, Long SX, Pinson SRM, Tang Z, Guerinot ML, **Salt DE**, Zhao FJ, Huang XY (2021). Univariate and Multivariate QTL Analyses Reveal Covariance Among Mineral Elements in the Rice Ionome. *Front Genet.* 12:638555.
166. Campos ACAL, van Dijk WFA, Ramakrishna P, Giles T, Korte P, Douglas A, Smith P, **Salt DE** (2021). 1,135 ionomes reveals the global pattern of leaf and seed mineral nutrient and trace element diversity in *Arabidopsis thaliana*. *Plant J.* 106(2):536-554. <https://onlinelibrary.wiley.com/doi/epdf/10.1111/tpl.15177>
165. Salas-González I, Reyt G, Flis P, Custódio V, Gopaulchan D, Bakhoun N, Dew TP, Suresh K, Franke RB, Dangi JL, **Salt DE**, Castrillo G (2020). Coordination between microbiota and root endodermis supports plant mineral nutrient homeostasis. *Science.* 371(6525)
- Commentary – Busch W and Chory J (2021) Multikingdom diffusion barrier control: Plant microbiomes modulate selective nutrient uptake by regulating diffusion barriers. *Science* 371(6525):125
164. Ruang-Areerate P, Travis AJ, Pinson SRM, Tarpley L, Eizenga GC, Guerinot ML, **Salt DE**, Douglas A, Price AH, Norton GJ (2020). Genome-wide association mapping for grain manganese in rice (*Oryza sativa* L.) using a multi-experiment approach. *Heredity* (Edinb). 126(3):505-520
163. Fischer S, Sánchez-Bermejo E, Xu X, Flis P, Ramakrishna P, Guerinot ML, Zhao FJ, **Salt DE** (2020). Targeted expression of the arsenate reductase HAC1 identifies cell-type specificity of arsenic metabolism and transport in plant roots. *J Exp Bot.* 72(2):415 – 425. <https://academic.oup.com/jxb/article/72/2/415/5920669>
162. Reyt G, Chao Z, Flis P, Salas-González I, Castrillo G, Chao DY, **Salt DE** (2020). Uclacyanin proteins are required for lignified nanodomain formation within Casparian strips. *Curr Biol.* 30(20):4103-4111. <https://www.cell.com/action/showPdf?pii=S0960-9822%2820%2931154-4>
- Commentary – Stöckle and Vermeer (2020). Journey to the center of the Casparian strip. *Curr Biol.* 30: R1256 – R1281.
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Editorials and Perspectives

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