CV

Updated: 2020-12-05

Elton Paul Hudson

b. 1982 North Carolina, USA
Currently: Associate Professor, KTH Royal Institute of Technology, Stockholm, Sweden

A. Professional preparation

Degrees:
- B.Sc. Chemical Engineering, May 2004. North Carolina State University. Raleigh, North Carolina, USA.

- Ph.D. Chemical Engineering, December 2009. University of California. Berkeley, California, USA.
Ph.D. Thesis: "Improving activity of enzymes in non-aqueous solvents." Advisors: Prof. Douglas Clark and Prof. Jeffrey Reimer.

Additional:
-Docent competence (supervision) in 2015
-Partners in Learning mentor program, KTH. 2015-2016. Mentor: Prof. Bas Teusink, Free University of Amsterdam.
-Post-doc. Royal Institute of Technology KTH. Stockholm, Sweden. Department Proteomics. 2010-2012. Advisors: Johan Rockberg, Prof. Mathias Uhlen.
-B.Sc. research project:*"Photodegradation of organic dyes"* Advisor: Prof. David Ollis, NCSU

B. Appointments

-May 2018. Associate Professor in Metabolic Engineering. Department of Protein Science, School of Biotechnology KTH
-Nov 2015. Docent in Metabolic Engineering. Department of Proteomics. School of Biotechnology KTH
-June 2014. Assistant Professor in Microbial Bioenergy. Department of Proteomics. School of Biotechnology KTH

C. Tutoring experience

Teaching:

As course responsible:
-BB1190 Gene Technology KTH (Basic Level, 7.5 HP) from 2013-present
-FCB3400- Frontiers in Metabolic Engineering (Doctoral level, 12 HP) from 2016-present
-BB2505 Current topics in Systems Biology KTH (Masters level 1.5 HP) from 2015-2017

As guest lecturer (1 lecture per year):
-KE2330 Renewable fuels and processes KTH (Basic level, 5 HP) from 2013-present
-KE2355 Nutrient Recovery KTH (Advanced level, 5 HP) from 2019-present
-BL7045 Microbiology Stockholm University (Basic level, 15 HP), from 2018-present

Administration:

-Board member (styrelseledamot) for the joint Karolinska-KTH-Stockholm University 2-year Masters program "Molecular Techniques in Life Science."
Tasks: Application review committee, Selection of fellowships for students, Organization of summer internship program for students, Organizing Ph.D. mentor program

Supervision:

Graduated Ph.D. students where I was main advisor:
Ivana Cengic, PhD May 2019 (Opponent: Annegret Wilde, Freiburg)
Josefine Anfelt, PhD May 2016 (Opponent: Patrik Jones, Imperial College)
Kiyan Shabestary, PhD September 2020 (Opponent: Danny Ducat, Michigan State)

Current Ph.D. students where I am main advisor:
Markus Janasch (2021)
Johannes Asplund-Samuelsson (2021)
Jan Karlsen (2022)

Co-advisor to Ph.D. students:
Karen Schriever (KTH 2018-present)
Marina Santos (Porto, 2017-present)
Johannes Yayo (KTH, 2017-present)
Teun Keuil (KTH, 2017-present)
Ceri Proffit (Kings College, 2017-present)

Postdocs supervised:
2020-present. Nick Crang
2016-present. Michael Jahn
2014-2019. Lun Yao
2017-2018. Da Wang
2014-2017. Danuta Kaczmarzyk
2012-2013. Heriberto Velez

Masters theses supervised (degree conferred by KTH unless specified):
Ivana Cengic (2012), Amanda Särnegrim (2012), Anja Ehrmann (2013; TU Berlin), Susan Bigesse (2014; TU Berlin), Kiyan Shabestary (2015), Maria Tengqvist (2015), Lara Kristin Stefanssdottir (2016), Jan Karlsen (2016), Linnea Österberg (2017), Quentin Thomas (2017); Racquel Perucca (2018; Lund University), Emil Ljungqvist (2018), Astrid Nilsson (2018), Olivia Hallman (2019; Umeå University), Nuha Salem (2019), Kyle Kimler (2019; Karolinska Institutet), Alexander Mattausch (2019: EMBL Heildberg); Manuel Bruch (2020; RTWH Aachen), Cristopher Widen (2020; Lund Unviersity), Emil Sporre (2020), Tobias Willi (2020).

International visiting students:
Marina Santos (Porto, at KTH 2017, 3 months); Moritz Koch (Tuebingen, at KTH 2018, 3 months), Maria Rodrigues (Sheffield, at KTH 2018, 2 months); Sarah Baldanta Callejo (University Complutense Madrid, at KTH 2020, 3 months).

D. Networks in academia and industry

2017-2021: ENGICOIN network (H2020-funded): Engineered conversion paths for CO2 in industry

2015-2016: Member of Faculty Assembly (fakultetskollegiet) at KTH
2013-2016: Coordinator for KTH Energy Platform
2012-2017: Formas Center for Metabolic Engineering (with Chalmers)
2010-2012: affiliate of Novo Nordisk Foundation Center for Biosustainability (with DTU Denmark)
2012-present: International Society of Metabolic Engineering
2009-present: American Institute of Chemical Engineers
2000. Summer Internship. Merck Pharmaceuticals. Elkton, Virginia, USA
2001. Summer Internship. DSM Pharmaceuticals. Greenville, North Carolina, USA

Project Management
2017-2022: Coordinator for VR grant INTEGRATE (24 MSEK) with 4 international partners

Reviewer assignments

Ad hoc reviewer assignments for journals
Nature Microbiology, Nature Catalysis, Cell Metabolism, Cell Reports, Metabolic Engineering, ACS Catalysis, ACS Synthetic Biology, Biotechnology for Biofuels, Microbial Cell Factories, Biotechnology and Bioengineering, Frontiers in Bioengineering, Metabolites, Bioprocess Engineering, Journal of Biotechnology, Trends in Biotechnology, Plant Physiology, Journal of Applied Phycology, Scientific Reports, Photosynthesis Research, Journal of Proteome Research, PLOS Computational Biology

For funding agencies
Netherlands Science Foundation NWO (2020)
Human Frontier Science Program (2017)
BBRSC UK (2017, 2018, 2019, 2020)
Czech Science Foundation (2015)
Austrian Science Fund (2019, 2020)
France Science Fund (2018)
Professor promotion review (2019 UC Davis USA, 2020 United Arab Emirates University)

Ph.D. thesis examinations

As Opponent
Kati Thiel (2020, University Turku);
Konstantinos Vavitsas (2017, Copenhagen University)

On Committee
Erika Hagrot (2019, KTH);
David Jullesson (2019, Chalmers);
Christoph Howe (2019, Uppsala);
Leonie Wenning (2018, Chalmers);
Rui Miao (2018, Uppsala);
Nicolaas Buijs (2016, Chalmers);
Elias Englund (2016, Uppsala);
Philipp Savakis (2016, Amsterdam);
Andreas Angermayr (2014, Amsterdam)

Editor Assignments:

Books

2019-2021: Editor for book "Metabolic Engineering in Cyanobacteria;" 17 Chapters, to be published by Wiley 2021

E. International cooperation partners

-Prof. Robert Kourist (TU Graz). Research collaboration
-Prof. Yagut Allaverdiyeva-Rinne (Turku Finland). Research collaboration
-Prof. Nigel Minton (Nottingham). Research exchange
-Prof. Patrik Jones (Imperial College). Co-publications
-Prof. Vassily Hatzimanikatis (EPFL, Switzerland). Research exchange
-Prof. Klaas Hellingwerf (Univ Amsterdam). Co-publications
-Prof. Paula Tamignini (Univeristy Porto). Research exchange
-Prof. Karl Forchhammer (University Tuebingen). Research exchange

F. Other merits of relevance

Publications

List of publications (Google Scholar):
https://scholar.google.se/citations?hl=en&user=ghMHTFoAAAAJ&view_op=list_works&sortby=pubdate

Prizes

-2020 Novo Nordisk *Ascending Investigator* Award
-2016 KTH CHE/BIO School Teacher of the year
-2014 SciLifeLab Fellow, Science for Life Laboratory and KTH
-2006 Graduate student instructor award. College of Chemistry, UC Berkeley
-2004 Professional Engineers of North Carolina Academic Excellence award, NC State University

Grants Awarded

As main applicant:
-2020-2025 Novo Nordisk Foundation (12 MSEK) *Ascending Investigator in Biotechnology Based Synthesis and Production*
-2019-2022 Novo Nordisk Foundation (4 MSEK) *Metabolite regulation of Calvin Cycle in Cyanobacteria*
-2017-2022 Vetenskapsrådet (24 MSEK) *Research environment: Cell Factories*
-2016-2017 ÅForsk (0.5 MSEK) *Gene editing in cyanobacteria with CRISPR/Cas*
-2016-2018 Formas Int'l Collaboration (2 MSEK) *Syngas metabolising bacteria*
-2015-2019 Formas Young Investigator (3 MSEK) *Protein Economy in Cyanobacteria*

As co-applicant:
-2020-2026 Swedish Foundation for Strategic Research SSF (12 MSEK to PH). *Agenda 2030 Research Center in Plant Biotechnology: Redesigning photosynthesis for future food security.* Main applicant Åsa Strand, Umeå University
-2016-2020 European Commission EU H2020 RIA (4 MSEK to PH) *ENGICOIN: Microbial conversion of CO2 waste gases.* Main applicant Guido Saracco, Italian Institute of Technology.
-2014-2020 Swedish Foundation for Strategic Research SSF (8 MSEK to PH) *Bioproduction of high value products from yeast and cyanobacteria.* Main applicant Jens Nielsen, Chalmers.

-2012-2016 Formas (5 MSEK to PH). *A Center of excellence in metabolic engineering.* Main applicant Jens Nielsen, Chalmers.

Postdoc/Researcher grants hosted by me:
2021. BBSRC Flexible Talent Mobility Account Award (36 kSEK), research exchange with Nottingham UK.
2020-2021 Formas Young Investigator (2 MSEK) Resource allocation in CO2-fixing bacteria (researcher Michael Jahn)
2017-2021 Formas International Postdoc (4 MSEK). Terpene production in bacteria (postdoc Elias Englund, co-advised UC Berkeley)

Conferences and Lectures

Invited conference participation
2020. Invited Speaker (short talk as "Young Algeneer"). AlgaEurope 2020
2020. Invited Speaker. 4th International Conference on Plant Synthetic Biology. Copenhagen, Denmark
2020. Invited Speaker. 10th International CeBiTec Research Conference series (ICRC) on Industrial Biotechnology with Microbes. Bielefeld, Germany.
2020. Invited Keynote Speaker on Bioenergy: European Congress on Biotechnology. Maastricht, Netherlands
2020. Invited Speaker, 11th European Workshop on Biology of Cyanobacteria, Porto, Portugal
2019. Invited Speaker, Autotrophy in Extreme Environments Mini-symposium, Uppsala Sweden
2019. Invited Plenary Speaker, 13th Workshop on cyanobacteria. Boulder, Colorado
2019. 14th Nordic Photosynthesis Conference. Turku. Finland
2019. Invited Speaker, Photobiology, Light and Life conference. Barcelona, Spain
2017. Invited Speaker, Life-Science Technology Day KTH.
2017. Phyconet (BBRSC) symposium on Cyanobacteria Biology. London, UK
2016. Invited Speaker, Workshop on Photosynthesis. Leiden, Netherlands
2013. Invited Speaker, Nordic Algae Workshop. Gothenburg, Sweden

Accepted conference talks
2016. Flash talk at Metabolic Engineering XII, Awaji Japan. "CRISPRi in cyanobacteria"
2013. Bioenergetics of Cyanobacteria (Pultusk, Poland). Speaker on topic: Biotechnology solutions for cyanobacteria biofuels

Invited seminars at universities
2019. Umeå University, Sweden. "The CRISPRi tool for cyanobacteria metabolic engineering"
2019. University Nottingham, England. "The CRISPRi tool for cyanobacteria metabolic engineering"
2018. University Tuebingen, Germany. "The CRISPRi tool for cyanobacteria metabolic engineering"
2018. Kings College, London. "The CRISPRi tool for cyanobacteria metabolic engineering"
2017. Uppsala University, "Synthetic and systems biology examples for creating cheap fuels from cyanobacteria"
2017. University Porto, Portugal. I3S seminar. "CRISPRi based metabolic engineering in cyanobacteria"
2017. Heinrich Heine University, Dusseldorf. RIBO-Nets Workshop. "CRISPRi transcriptional regulation for basic and applied research in cyanobacteria."
2014. University Amsterdam. "Butanol production from cyanobacteria"
2013. Uppsala University. "Biotechnology for cyanobacteria biofuels"

Public Outreach

Lectures

2019. Presentation at Moving Across Science and Art. Stallet, Stockholm, "Fuels from the sun"
2018. Presentation at iGEM Art Exhibition. R1 reactor Stockholm. "The three pillars of synthetic biology"
2018. Speaker in symposium at Swedish Engineering Academy IVA. "Genome editing-to feed, to fuel, to cure." Stockholm
2016. Speaker at SEB and KTH event, "Morgondagens energilösningar för en hållbar värld," R1 reactor, Stockholm
2016. Speaker at "Vid forskningsfronten" – en lärarfortbildningsserie i afterwork-format, hosted by KTH. "Reprogramming bacteria that capture and convert the sun's energy".
2016. Speaker at "Bioteknikdagarna," for biotechnology students, hosted by KTH
2015. Speaker at KTH 100 Centennial Symposium meeting on climate change (Stockholm) "Photons to fuel"
2014. Speaker at Tekniska Museet, Stockholm "Toward fuel from cyanobacteria"
2013. Speaker at KTH event, "Morgondagens energilösningar för en hållbar värld," R1 reactor, Stockholm, with special guest Carl XVI Gustaf, King of Sweden
2012. Speaker at Energy Dialogue, KTH "Can bacteria make cheap fuels?"
2012. Speaker at "Bioteknikdagarna," for biotechnology students, hosted by KTH

Interviews

2020. Interview with Forskning och Framsteg, Print edition, March 2020. Article on "Solar Fuels."
2019. Video interview. Vattenfall's Framtidens Energi video series. Episode 8 in "Jakten på Kraften." Episode Link: https://youtu.be/VmCb1vCL5TY
2015. Interview in KTH&Co. (KTH business magazine). COVER story
2015. Interview with Radio Sweden. "Its year 2100, are there crocodiles in Sweden?"
2013. Interview with NyTeknik. "Tämd bakterier ger grön bensin." (picked up by Aftonbladet)
2014. Interview with SverigesRadio (Vetenskapens värld, 2014-05-04). "Genpussel ska ge nytt drivmedel."

Authored

2020. "Giving CO2 fixation a second chance," News and Views article in *Nature Catalysis*
2017. (co-author) Article for newspaper "Skärgårdsredaren," (vol 22, no. 4). "Bränsle från gröna cellfabriker". Main author: Jan Karlsen, PhD student
2016. Chapter in *Environmental Reality: Rethinking the Options – His Majesty King Carl XVI Gustaf of Sweden's 12th Royal Colloqium*. "Can Solar Energy Fuel the World?"

Organizer/support for conferences

2021: Co-Organizer 15th Nordic Photosynthesis Conference. Gothenburg
2019: Co-Organizer for CO2OLING the Earth Workshop (H2020-funded). Amsterdam, Netherlands. 100 participants.
2019. Moderator for Swedish FTD initiative symposium. Stockholm. Moderator. 100 participants
2018. Moderator for Where is Life Heading in the Future? Stockholm Science City Foundation. Engelsberg Ironworks. Axess TV. 50 participants
2017. Moderator for Where is Life Heading in the Future? Stockholm Science City Foundation. Engelsberg Ironworks. Axess TV. 50 participants
2013: Organizer for Seminar in Industrial Biotechnology at KTH. 25 participants

2009: Organizer for Gordon Research Seminar in "Biomolecular NMR Spectroscopy." 75 participants

G. Dates for parental leave

-2020-01-01 to 2020-05-30 (5 months, 100% leave)
-2019-12-01 to 2019-12-31 (1 month, 100% leave)
-2017-10-01 to 2018-03-31 (6 months, 80% leave)