

PERSONAL INFORMATION

Family name, First name: **DESTOUNI, GEORGIA (Gia)**
 Researcher unique identifier: ORCID 0000-0001-9408-4425
 Date of birth: January 26, 1961
 Nationality: Sweden
 URL for web site: <https://www.su.se/english/profiles/gdest>

- **EDUCATION**

1993 **Docent** in Engineering Hydrology, Faculty/School of Civil Engineering, Dept. of Water Resources Engineering, KTH Royal Institute of Technology (KTH), Sweden
 10/10/1991 **PhD** in Hydraulics Engineering, Faculty/School of Civil Engineering, Dept. of Hydraulics Engineering, KTH, Sweden
 1987 **MSc** in Civil Engineering, Faculty/School of Civil Engineering, KTH, Sweden

- **CURRENT POSITION**

2005– **Professor**, Faculty of Science, Dept. of Physical Geography, Stockholm University (SU), Sweden

- **PREVIOUS POSITIONS**

2016 – 2022 **Head of Dept.** of Physical Geography, Faculty of Science, SU, Sweden
 2013 – 2016 **Secretary General** of The Swedish Research Council Formas, Sweden
 2015 – 2016 **Head of Research Unit** for Hydrology, Water Resources and Permafrost, Dept. of Physical Geography, Faculty of Science, SU, Sweden
 2003 – 2005 **Guest Professor**, Dept. of Physical Geography, Faculty of Science, SU, Sweden
 2001 – 2002 **Vice Head of Dept.** of Land and Water Resources Engineering, KTH, Sweden
 1999 – 2005 **Professor**, Dept. of Land and Water Resources Engineering, School of Architecture and the Built Environment, KTH, Sweden
 1998 – 1999 **Associate Professor**, Dept. of Land and Water Resources Engineering, KTH, Sweden
 1994 **Visiting Scientist**, Dept. of Agricultural and Biological Engineering, University of Florida, Gainesville, USA
 1992 – 1998 **Senior Research Fellow**, Swedish Natural Science Research Council, Sweden

- **FELLOWSHIPS, AWARDS, HONORS – Life-time and recent examples**

2023 **Fellow** of Stellenbosch Institute of Advanced Study (STIAS), South Africa
Opening Lecturer at the University of Padova 800-year celebration symposium “AQVA– Our water – our world – our life”, February 7, Italy
 2022 **H.M. The King's Medal** of 8th size of the Order of Seraphim for “*outstanding contributions in water and climate research*”, Sweden
 2022 **Celcius-Linnaeus Symposium Lecturer**, Uppsala University, Sweden
 2021 **Distinguished Lecturer** of The Global Institute for Water Security and Global Water Futures, University of Saskatchewan, Canada
 2021 **On Reuters Hot List** of the world's top climate scientists, global
 2020 **Sigge Thernwall Grand Prize** for Research on Sustainable Infrastructure and Built Environment, Sweden
 2019 **Boussinesq Lecturer** of the Dutch-Belgian Boussinesq Center for Hydrology, The Netherlands
 2015 **Fellow** of the American Geophysical Union (AGU), USA and global
 2013 **Henry Darcy Medal** of the European Geosciences Union (EGU), Europe and global
 2013 **Research and Development Award** of Nova Centre for University Studies, Oskarshamn, Sweden
 2003 **Academy Member** of the Royal Swedish Academy of Sciences (KVA), Sweden
 2003 **Academy Member** of the Royal Swedish Academy of Engineering Sciences (IVA), Sweden

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

Main adviser of 24 PhD-students and 16 post-doctoral fellows

Ongoing 2022 at SU: PhD students – M. Zahrei, J. Cantoni, Y. Ma; Postdocs - D. Althoff, A. Scaini
Completed PhD students - at SU: 2021 G. Vigouroux, R. Goldenberg; 2016 L. Verrot, E. Johansson/Bosson; 2015 F. Jaramillo; 2014 J. Mård Karlsson, K. Mazi; 2013 S. Asokan, A. Bring; 2011 K. Persson; 2008 G. Olli, F. Hannerz; 2007 A. Darracq, Y. Shibuo, C. Baresel; at KTH: 2006 G. Lindgren; 2005 C. Prieto; 2003 U. Salmon; 2001 E. Simic; 2000 A. Gupta; 1998 J. Jarsjö; Completed Postdocs at SU: 2020 S. Seifollahi-Aghmiuni, N. Ghajarnia; 2017 R. Orth; 2016 Z. Kalantari; 2015 A. Quin; 2014 J. Juston, P. Rogberg; 2013

Y. van der Velde, N. Vercauteren; 2012 L. Gong; 2010 A. Frampton; 2009 S. Lyon, C. Prieto; 2008 C. Baresel. **Co-adviser** for several more PhD students and postdocs, not listed.

• **INSTITUTIONAL RESPONSIBILITIES, COMMISSIONS OF TRUST - Recent examples**

International

- 2022 – Member of the Baltic Earth Science Steering Group
- 2021 – Editor In Chief of *Water Resources Research*, AGU
- 2019 – 2021 Member of the Union Fellows Committee of AGU
- 2015 – 2019 Vice President of the International Association for Hydrological Sciences
- 2014 – 2019 Evaluation Panel Member of the European Research Council
- 2016 – 2018 Member of the Scientific Advisory Committee of Science Europe
- 2010 – 2022 Steering Committee Member of Navarino Environmental Observatory, Messinia, Greece

National

- 2021– 2022 Member of the Board of Tarfala Research Station, Stockholm University
- 2016 – 2022 Member of the Board of Bolin Centre for Climate Research, Stockholm University
- 2016 – 2021 Member of the Board of Stockholm Resilience Centre, Stockholm University
- 2010 – 2016 Member of the Board of the Royal Swedish Academy of Sciences (KVA)
- 2014, 2010 Chair of the Prize Committee for the International Crafoord Prize in Geosciences (also member of the committee in 2006)

Societal engagement

- 2022 – Member of KVA's Environment and Energy Committee
- 2019 – Member of the Council of Trustees of WWF Sweden
- 2020 – 2022 Member of IVA's Steering Committee for the Academy's societal engagement project "Sustainable water supply" and Chair of its theme "Climate change impacts"
- 2014 – 2020 Member of the Scientific Council of the Swedish Meteorological and Hydrological Institute
- 2015 – 2016 Member of Scientific Council for Sustainable Development commissioned by the Swedish Government

• **REVIEWING ACTIVITIES**

Numerous international and national assignments as evaluator of faculty appointments, research proposals, and PhD dissertations, and as journal reviewer and editor, with examples of my editorships including:

- 2021 – Editor In Chief for *Water Resources Research*
- 2008 – 2020 Associate Editor for *Journal of Hydrology*
- 2012 – 2020 Associate Editor for *Ambio*
- 2019 – 2020 Guest Editor for *Sustainability*
- 2018 – 2019 Guest Editor for *Water*
- 2017 – 2018 Guest Editor for *Land Degradation and Development*
- 2012 – 2013 Guest Editor for *Surveys in Geophysics*
- 2011 – 2012 Guest Editor for *Hydrogeology Journal*
- 2008 – 2009 Associate Editor for *Hydrogeology Journal*

• **MEMBERSHIPS OF SCIENTIFIC SOCIETIES & MAJOR COLLABORATIONS- Recent examples, additional to scientific community responsibilities & commissions listed above**

- [DIGITAL FUTURES](#) Research Centre, KTH Royal Institute of Technology, Stockholm University and RISE Research Institutes of Sweden – *Digital Futures Faculty*
- EU ERASMUS+ Training new generations on geomorphology, geohazards and geoheritage through Virtual Reality Technologies GeoVT – *Coordinator*
- European Civic University CIVIS PhD network in Solid Earth System Dynamics (SESD) – *Partner*
- EU COST Actions: [DAMOCLES](#) - Understanding and modeling compound climate and weather events; [FIRElinks](#) - Fire in the Earth System: Science and Society – *Partner & Management committee member*
- EU H2020 project COASTAL – Collaborative Land-Sea Integration Platform, <https://h2020-coastal.eu> – *Partner*
- Nordic Excellence Program CLINF - Climate-change effects on the epidemiology of infectious diseases and the impacts on Northern societies, <https://clinf.org> – *Partner*
- GWEN - Global Wetland Ecohydrology Network, www.gwennetwork.se - *Founder and coordinator*

ONGOING GRANTS

<i>Project Title</i>	<i>Funding source</i>	<i>Amount (EUR)</i>	<i>Period</i>	<i>Role of the PI</i>
Coupled freshwater system variations, trends and their drivers around the world	The Swedish Research Council VR	~360 000 EUR	2023-2026	PI, Project leader
Innovation and partnerships for effective programs of measures for good water quality and ecological status	The Swedish Research Council Formas	~150 000 EUR	2021-2023	PI, Coordinator
Unravelling the legacy of historical, emerging and future groundwater pollution to the coastal ocean	Knut och Alice Wallenbergs Stiftelse (KAW)	~3 000 000 EUR	2023-2028	Co-PI
Science for a secure society: Hydro-climatic hazard, risk, and crisis management in Sweden	The Swedish Research Council VR	~680 000 EUR	2022-2025	Co-PI
AI-powered Knowledge Integration to Carbon-Neutral Cities	The Swedish Research Council Formas	~400 000 EUR	2021-2025	Co-PI
Training new generations on geomorphology, geohazards and geoheritage through Virtual Reality Technologies	EU Erasmus+	~480 000 EUR	2021-2023	PI, Coordinator
Subsurface water-system role under climate and land-use changes	Bolin Centre for Climate Research	~150 000 EUR	2019-2023	PI, Project leader
Sustainable water supply, clean water availability in the changing climate	Swedish Agency for Marine and Water Management	~130 000 EUR	2020-2022	PI, Project leader
Land-sea integration platform - COASTAL	EU H2020	~5 000 000 EUR	2018-2022	Partner, WP & Multi-Actor Lab leader

CAREER FUNDING SUMMARY

I have been PI for 36 and co-PI for 21 major national grants, and Coordinator or Swedish PI & Work Package (WP)/Case Study (CS) leader for 5 major EU grants and 1 major Nordforsk Excellence Centre grant. My research **grants in the last 10 yrs** sum up to **~15.4 million (M) EUR**, including as **~2.4 M EUR as main PI/Coordinator**: 2023-2026 VR (~0.4 M EUR); 2021-23 EU (0.3 M EUR), Formas (~0.15 M EUR); 2019-23 Bolin Centre (~0.15 M EUR); 2020-22 HaV (~0.13 M EUR); 2017-20 Formas (~0.22 M EUR), 2014-16 Formas (~0.44 M EUR); 2013-15 Formas (~0.38 M EUR); 2013-14 VR (~0.11 M EUR); 2012-15 Nova-Oskarshamn (~0.15 M EUR); and **~13 M EUR as Co-PI and WP/CS leader**: 2022-2027 KAW (~3 M EUR); 2022-25 VR (~0.68 M EUR); 2021-25 Formas (~0.4 M EUR); 2020-22 Formas (~0.3 M EUR); 2018-22 EU (5 M EUR); 2016-21 Vinnova (~0.66 M EUR); 2017-20 NordForsk Excellence Centre (~2.73 M EUR).

TEN-YEAR TRACK RECORD

During the last ten years, the leading edge of my research vision, leadership and collaboration networks, and their competitiveness in attracting research funds and early career scientists to our research group have been evident in several ways. In this period, I have been granted national and international research funds of **~15.4 million EUR** as main PI/Coordinator or Co-PI and Work Package/Case Study leader. I have also as main adviser attracted, provided funding for and supervised **10 PhD students** (of **total 24** so far as main adviser) and **9 postdocs** (of **total 16**), in addition to also co-supervising several more PhD students and postdocs. Many of the early career scientists I have helped and worked with have gained **top positions** during the last ten years, at universities as full professors (2) or associate and tenure-track assistant professors (7), research institutes as research leaders and senior researchers (4), and other knowledge-based organizations and private companies as senior scientists and analysts (6).

My scientific contributions have been recognized in several **honors and awards** in the last 10-year period. Recognitions include, among others, in 2022: receiving H.M. The King's Medal of 8th size of the Order of Seraphim in Sweden for "*outstanding contributions in water and climate research*", and elected Fellow of the Stellenbosch Institute of Advanced Study (STIAS), South Africa, in the autumn 2023 cohort for study of "*The African freshwater system: pressure-impact relationships, changes and risks*"; in 2021: being on Reuters Hot List of the world's top climate scientists; in 2020: receiving the Swedish Sigge Thernwall Grand Prize for Research on Sustainable Infrastructure and Built Environment in recognition of my "*impactful contribution to our knowledge of how infrastructures interact with water flows and water quality [and] world-leading research [that] has influenced science and technology and led to concrete applications*"; in 2015: being elected Fellow of the American Geophysical Union (AGU) "*for groundbreaking contributions to transport phenomena in the hydrological cycle at multiple scales*"; in 2013: receiving the Henry Darcy Medal of European Geosciences Union (EGU) in recognition of my "*outstanding, pathbreaking, and seminal contributions to hydrology and water resources research.*" In addition to the research contributions, award motivations emphasize my dedicated supervision of young scientists, sustained research communication and societal engagement, and leadership that inspires further research.

I have in this period also been **invited lecturer** at many prestigious scientific events, for example most recently as *keynote lecturer* at the AQUA Conference for the *celebration 800 years of the University of Padua* (2023), *Celcius-Linnaeus Symposium Lecturer* at Uppsala University, Sweden (2022), *Distinguished Lecturer* of The Global Institute for Water Security and Global Water Futures, University of Saskatchewan (2021), *Boussinesq Lecturer* of the Dutch-Belgian Boussinesq Center for Hydrology (2019). Meanwhile, I have also **served the science community, my university and society**, for example, with ~60 (~130 in total) examples of public outreach, research communication, and societal engagement publications in different contexts and forms, nationally and internationally, and as Editor-In-Chief of the leading AGU water science journal *Water Resources Research* (since 2021), Head of Department of Physical Geography at Stockholm University (2016-2022), Secretary General of the Swedish Research Council Formas (2013-2016), AGU Union Fellows Committee Member (2019-2021), Vice President of the International Association for Hydrological Sciences (2015-2019), ERC Evaluation Panel Member (2014-2019), Member of the Board of the Royal Swedish Academy of Sciences (until 2016), and Chair of the Prize Committee for the International Crafoord Prize in Geosciences 2014.

Going forward, I aim at combining basic and challenge-driven research that has scientific, societal and educational relevance and necessary interdisciplinarity for addressing water as a vital resource and a central part of Earth's climate, environmental and societal systems and all dimensions of a sustainable development.

TEN-YEAR PUBLICATION SUMMARY

Since 2013, I have published 119 peer-reviewed journal articles (of total 211), 4 book chapters or edited books (of total 20), 22 reports (14) and open-access (8) databases (of total 61), and at least 56 public outreach, research communication, and societal engagement publications in different contexts and forms, nationally and internationally (of total 130 examples in [my publication list](#)). Currently, my h-index is 59 with 11 927 citations of my publications, of which 26 and 187 have ≥ 100 and ≥ 10 citations, respectively (Google Scholar).

TEN PUBLICATION EXAMPLES FROM LAST 10 YEARS

*PhD student, #postdoc, §research/data engineer (co-)supervised by me

1. Basu NB, Van Meter KJ, Byrnes DK, Van Cappellen P, Brouwer R, Jacobsen BH, Jarsjö J, Rudolph DL, Cunha MC, Nelson N, Bhattacharya R, **Destouni G**, Olsen SB., Managing Nitrogen Legacies to Accelerate Water Quality Improvement, *Nature Geoscience*, 15, 97-105, 2022.
Large collaborative review. Identifies key knowledge gaps related to nitrogen legacy sources and proposes approaches to manage and improve water quality related to these legacies. An inspiration to this proposal.
2. #Ferreira CSS, #Seifollahi-Aghmiuni S, **Destouni G**, #Ghajarnia N, Kalantari Z, Soil degradation in the European Mediterranean region: Processes, status and consequences. *Science of the Total Environment*, 805, 150106, 2022.
Comprehensive review, identifying knowledge gaps related to the interactions of soil and water degradation, relevant for legacy sources, with focus on the Mediterranean region, a main study region also in this proposal.
3. **Destouni G**, *Cantoni J, Kalantari Z, Distinguishing active and legacy source contributions to stream water quality: Comparative quantification for chloride and metals, *Hydrological Processes*, 35, e14280, 2021.
Novel methodology developed for data-based distinction & quantification of legacy sources. Multi-catchment demonstration of legacy sources dominating pollutant loads.
4. *Vigouroux G, Kari E, Beltrán-Abaunza JM, Uotila P, Yuan D, **Destouni G**, Trend correlations for coastal eutrophication and its main local and whole-sea drivers – Application to the Baltic Sea, *Science of the Total Environment*, 779, 146367, 2021.
Novel methodology developed for data-based distinction of anthropogenic, climatic and hydrospheric drivers of coastal-marine eutrophication trends. International team, led by me and with my PhD student as lead author.
5. #Ghajarnia N, Kalantari Z, **Destouni G**, Data-Driven Worldwide Quantification of Large-Scale Hydroclimatic Covariation Patterns and Comparison with Reanalysis and Earth System Modeling, *Water Resources Research*, 57(10), e2020WR029377, 2021.
Worldwide multi-catchment quantification of co-variation patterns among various water flow pathways. Comparison of observation-based and Earth System Model results, identifying key model gaps.
6. Albert JS, **Destouni G**, Duke-Sylvester SM, Magurran AE, Oberdorff T, Reis RE, Winemiller KO, Ripple WJ, Scientists' warning to humanity on the freshwater biodiversity crisis, *Ambio*, 50, 85-94, 2021.
Collaborative work, quantifying past-to-present and projecting future degradation trends for inland water ecosystems. Chilling projection of human water use approaching 1/2 of Earth's capacity by midcentury.
7. *Panahi MD, Kalantari Z, #Ghajarnia N, #Seifollahi-Aghmiuni S, **Destouni G**, Variability and change in the hydro-climate and water resources of Iran over a recent 30-year period, *Scientific Reports*, 10, 7450, 2020.
Large-scale water balance-based quantification of co-variations and trends in climate and surface- and ground-water flows and stores. Country-wide assessment of linked ground-surface water changes.
8. #Orth R, **Destouni G**, Drought reduces blue-water fluxes more strongly than green-water fluxes in Europe, *Nature Communications*, 9, 3602, 2018.
Continent-wide quantification of drought propagation through soil moisture reductions to impacts on evapotranspiration and runoff fluxes. Identification of propagation times along the different water pathways.
9. *Jaramillo F, **Destouni G**, Local flow regulation and irrigation raise global human water consumption and footprint, *Science*, 350 (6265), 1248-1251, 2015.
Worldwide quantification of how human-driven water flow regulation and irrigation lead increase the global human water footprint.
10. **Destouni G.**, *Jaramillo F., §Prieto C., Hydroclimatic shifts driven by human water use for food and energy production, *Nature Climate Change*, 3, 213-217, 2013.
Cross-regional multi-catchment demonstration of human land and water uses changing evapotranspiration and runoff fluxes over the last century. Global upscaling showed net total evapotranspiration increase exceeding a proposed water planetary boundary.