

PERSONAL
INFORMATION

Date of birth: 24 July 1975
Nationality: Swiss

E-mail: philip.brunner@unine.ch
Rue des Fahys 71, 2000, Neuchâtel

ACADEMIC
EXPERIENCE

Full Professor, University of Neuchâtel **August 2012 - current**
Chair of hydrogeology, Centre for Hydrogeology and Geothermics (CHYN).

SNF Ambizione Researcher, University of Neuchâtel **February 2010 - July 2012**
Chief Investigator on a Swiss National Foundation grant on understanding the geological controls (streambed and aquifer heterogeneity) on surface water groundwater interaction.

Research Fellow, Flinders University and CSIRO, Australia **August 2009 - January 2010**
Chief Investigator on a grant on conceptualizing disconnected streams. Goal: To assess the available field methods and develop new measurement concepts. Funded by the National Water Commission.

PostDoc, Flinders University, Australia **January 2007 - July 2009**
PostDoc position in collaboration with Prof. P. Cook (CSIRO) and Prof. C. Simmons (Flinders). Integration of multiple isotopic data (including radon) obtained in field campaigns to quantify aquifer-wetland interactions. Development of new concepts for modelling surface water and groundwater.

Researcher, Swiss Federal Institute of Technology, Zurich **September 2005 - October 2006**
Post Doctoral position at the Institute of Hydromechanics and Water Resources Management.

PhD-student, Swiss Federal Institute of Technology (ETH), Zurich **August 2001- August 2005**
PhD project (2001-2005). Development of two new field methods using remote sensing, geophysics, environmental tracers. Development of a model for the Yanqi Basin, China.

- Title: "Modelling the water and salt balance in the semi-arid Yanqi Basin, China"
- Advisor: Prof. Wolfgang Kinzelbach

MS & BS in Environmental Engineering, ETH Zurich **June 1995 - April 2001**
M.S., Environmental Engineering, April 2001

- Master thesis "Modelling the Kavimba Wellfield, Botswana"

INSTITUTIONAL
SERVICE**University of Neuchâtel, Switzerland**

- Nomination and Hiring committee for a Prof. in Ecology, Faculty of Sciences UniNe **2014**
- Member of the deans office, Faculty of Sciences **2013 -current**
- Establishment of an MOU between NCGRT (Australia) and the University of Neuchâtel. Signed by Prof. C.T. Simmons (NCGRT) and Prof. Martin Rahier (UniNe) **13.9.2012**
- Member of the steering comity, ECOFOC (MAS and CAS, Écologie et sciences de l'environnement) **2012 - current**
- Intermediate Director, CAS DEEGEOSYS **2013 - September 2014**

GRANTS

Sciex Fellowship Funding: 63'500 CHF **2014**

- Applicants: P. Brunner, K. Kukemilks
- Project Title: "Spatio-temporal controls of hydrogeological mechanisms causing landslides)"

Federal Office for the Environment and 17 Swiss Cantons Funding: 728'000 CHF **2014**

- Applicants: P. Grosvernier (LIN'eco), PI UniNe: P. Brunner. In collaboration with WSL, Geo7.
- Project Title: "Maintien des ressources en eau dans le bassin versant des biotopes marécageux d'importance nationale"

Swiss National Science Foundation Funding: 376'000 CHF **2014**

- Applicants: Dr. C. LeBayon (UniNe), P. Brunner, Dr. C. Guenat (EPFL).
- Project Title: "Ecosystem engineers' contribution to soil structure formation in floodplains"

- Federal Office for the Environment, Switzerland** Funding: 650'000 CHF **2013**
- Applicants: PI UniNe: P. Brunner. In collaboration with Jan Seibert (PI Uni ZH), Daniel Hunkeler (CHYN), Markus Weiler (Uni Freiburg, DE)
 - Project Title: "Auswirkungen der Klimaänderung auf das Grundwasser und Niedrigwasserverhältnisse in der Schweiz"
- Federal Department of Foreign Affairs, Switzerland** Funding: 200'000 CHF **2011**
- Applicants: Ellen Milnes and Philip Brunner. In collaboration with DEZA, UNHCR, UNOSAT
 - Project Title: "Quantification of recharge in inland freshwater lenses: Application to the Merti aquifer, Eastern Kenya."
- SNF AMBIZIONE** Funding: 429'500 Swiss Franks **2009**
- Applicant: Philip Brunner
 - Project Title: "Controls and impact of geologic heterogeneity and temporal dynamics in surface water groundwater interaction."
 - Collaborators: Prof. P. Renard, University of Neuchâtel, Switzerland, Prof. R. Therrien (Laval, Canada), Prof. C. Simmons (Director of National Centre of Groundwater Research and Training, Australia), Prof. X.G. Dong (Xinjiang Agricultural University, China)
- Marie Curie International Incoming Fellowships (IIF)** Funding: 175.065 Euros **2009**
- Applicant: Philip Brunner
 - Proposal Call: *FP7-PEOPLE-2009-IIF* Proposal number: *253002*
- I was invited to negotiations but withdrew the proposal as funding for my project in Switzerland was already available through SNF. The project evaluation score was 95 points out of 100.
- Australian Research Council DP0984539** Funding: 165'385 Euros **2008**
- Applicants and title: C. Simmons, I. Cartwright. "Connected Water in Semi Arid Environments"
- I was chief investigator in this project.
- Australian Water Commission: R-15AU2** Funding: 2'852'700 Euros **2009 - 2010**
- Applicants and title: C.T. Simmons and P. Cook. "Losing streams project"
- For the period 2009-2010, I was chief investigator in the project.
- OTHER FUNDING **Faculty of Science, University of Neuchâtel** Funding: 136'000 CHF **2014**
- Applicants: P. Brunner, T. Südmeyer, P. Renard. P. Felber
 - Project Title: "LIGHT: Laser Imaging of Geological Heterogeneity "
- CONSULTING **Federal Office for the Environment, Switzerland** **2013**
- Applicants: PI: P. Brunner. In collaboration with Daniel Hunkeler (CHYN), P. Grosvernier (Lineco)
 - Project Title: "Circulation de l'eau sur les marais"
- NAGRA** **2013**
- Applicants: Philip Brunner and Philippe Renard (CHYN)
 - Project Title: "Hyperspectral analysis of the Opalinus Clay"
- EDITORIAL WORK **Guest Editor:** Water (Special Issue "Surface Water Groundwater Interactions: From Theory to Practice", with Prof J. Fleckenstein) **2014**
- Associate Editor:** Hydrogeology Journal **2009 - 2013**
- Reviewer for Journals:** Journal of Hydrology, International Journal of Remote Sensing, Water Resources Research, Journal of Geophysical Research, Ground Water, Water Resources Management, Hydrology and Earth System Sciences, Hydrobiology, Journal of Earth System Science, Hydrological Processes, Australian Journal of Water Resources, Environmental Modeling and Assessment, Environmental Modelling and Software, Environmental Earth Sciences, Journal of Oceanography and Marine Science, Scientific Research and Essays, HESS, Water and Environment Journal; Journal of Hydrology and Hydromechanics
- Reviewer for Conferences:** 2008 IAHS "Water Down Under", 2011 "MODSIM" Perth

HONOURS AND
AWARDS

- "Journal of Hydrology Referees Award" for excellent reviews in "Hydrological Analysis" (2009)
- "Journal of Hydrology Referees Award" for excellent reviews in "Vadose Zone Hydrology" and "Groundwater Hydrology" (2009)
- "ETH medal" for outstanding PhD thesis (2006)
- "Young scientist outstanding poster presentation award" - European Geological Union (2004)
- "Willy Studer"- Award for best graduation at the department (2002)
- "ETH medal" for outstanding diploma thesis (2002)
- "Price Waterhouse Cooper Sustainability Award" for outstanding student work (2002)

TEACHING

University of Neuchâtel

2010 - current

- Hydrologie avancée (Spring 2013, 2014)
- Hydrologie générale (Fall 2012,2013)
- Lectures and exercise for AQMS (every year since February 2011)
- Preparation of a 1 week course "GIS" and "Remote Sensing" for master students as part of the lecture "Analyse quantitative des données et modélisation statistique, AQMS" (March 2010)

Flinders University

2007 - 2010

- Tutoring of numerical groundwater modelling courses (2008, 2009)
- Preparation and tutoring "Field methods in Soil Chemistry" and "Geophysics" for a 1 week field camp (in Port Lincoln, South Australia) for Environmental Science Students, Australia (2008)
- Preparation of lectures on "Groundwater Surface Water Interaction", "Groundwater Recharge" for graduate students (2008)
- Invited guest lecturer for "The International Centre of Excellence in Water Resources Management", Australia (2007)
- Successfully completed higher education teaching course (2009) at Flinders University (FFOUT).

Xinjiang Agricultural University, China

2006

- Preparation and presentation of a 3 day course on "Surface water - groundwater modeling in Modflow: Advanced Numerical approaches" at the Xinjiang Agricultural University (2006)

SUPERVISION OF
STUDENTS

PhD/Postdocs at University of Neuchâtel

2010 - current

- Supervision of PostDoc Daniel Käser (starting 1. November 2014)
- Supervision of PostDoc Fabien Cochand (starting 1. November 2014)
- Supervision of PostDoc Daniel Partington (2013 - current)
- Supervision of PhD Student Laurent Fasnacht (1. September 2014)
- Supervision of PhD Student Claire Carlier (2014 - current)
- Supervision of PhD Student Guillaume Gianni (2013 - current, with P. Perrochet)
- Supervision of PhD Student Oliver Schilling (2012 - current)
- Supervision of PhD Student Lorienne Thüler (2012 - 2014)
- Co- supervision of PhD Student K. Kukemilks, University of Latvia (SCIEX fellow 1.10.2014 with T. Sacks)
- Co- supervision of PhD Student Andreas Schomburg (with Dr. C. leBayon, starting 1.1. 2015)
- Co- supervision of PhD Student Lucien Blandenier (with Dr. Milnes, 2011 - current)
- Co- supervision of PhD Student Christian Möck (with Prof. Hunkeler, 2011 - 2014)
- Co- supervision of PhD Student Damian Glenz (with Prof. Renard, 2010 - 2012)

Master students in Neuchâtel

2010 - current

- Co- Supervision of Antoinette Verburgh (with P. Perrochet 2014-2015)
- Co- Supervision of Murielle Voutaz (with P. Perrochet 2014-2015)
- Co- Supervision of Yuri Gramigna (with D. Hunkeler 2014-2015)
- Supervision of Mathieu Monteleone (with P. Perrochet 2014-2015)
- Supervision of Marc-Antoine Zermatten (with Philippe Renard 2014-2015)
- Supervision of ETHZ student Simone Grindat (2014)
- Co- supervision of Vanessa Farine (with Prof. E. Mitchel, 2013)

- Supervision of Guillaume Gianni (2012 -2013)
- Co- supervision Lukas Burkhard (with Prof. Hunkeler, 2013)
- Co- supervision Roger Müller (with Prof. Renard, 2012)
- Supervision of PhD Student Oliver Schilling (ETHZ in collaboration with Prof. W. Kinzelbach) (2012)
- Co- supervision Lea Thallon (with Prof. Renard, 2011)

Flinders University

2007 - 2012

- Co- supervision of PhD Student Daniel Partington (with Prof. Simmons, 2008 - 2012)
- Co- supervision of PhD Student Eddie Banks (with Prof. Simmons, 2009 - 2012)
- Co- supervision of Honors Students Dylan Irvine, Penny Johnsten, Luisa Powell, Enys Watt (with Prof. Simmons, 2008 - 2010)

ETH Zurich

2002 - 2006

- Supervision of five master thesis projects (between 2002 - 2006 at the IHW)

Flinders University: Supervision of two Honours thesis at Flinders University. Preparation and presentation of a 2 day course on "Surface water-groundwater modelling in Modflow: Advanced Numerical approaches" at the Xinjiang Agricultural University (2006). Guest lecturer for Supervision of five master thesis projects at the Institute of Hydromechanics and Water Resources Management, Swiss Federal Institute of Technology.

ORGANIZED CONFERENCE(S) (SESSIONS)

- 3rd International HydroGeoSphere User Conference. **3rd - 5th of April 2013**
<https://www2.unine.ch/HGS-NEUCH2013/page-29982.html>
- Brunner, P., Renard, P., Simmons, C.T. 2011 *H44. Impact of Heterogeneity at Hydrological Interfaces for Biogeochemical Reactions, Surface Water - Groundwater Interactions, and Other Hydrological Processes*. Accepted session for AGU Fall Meeting, San Francisco.
- Brunner, P., Hunt, R., Cook, P.G. 2011 *Groundwater-surface water Interaction: Relating Understanding that spans the water-rich Midwest to the scarcity of the Outback*. Geological Society of America Annual Meeting in Minneapolis, 8-12 October 2011.

FIELD WORK AND MEASUREMENT CAMPAIGNS

Honan Wetland, Australia *Field Research*

March 2007 - December 2009

Radon and stable isotope sampling in Honan wetland. Installation and monitoring of a groundwater and surface water observation network in the wetland.

Yanqi Basin, China *Field Research*

August 2001 - September 2004

I planned and carried out three measurement campaigns (in total over 6 months) in co-operation with the "Xinjiang Agricultural University" and the "Beijing Institute for Geo-Environmental Monitoring". Different measurement techniques were applied, including:

- Geophysical measurements to quantify the vertical distribution of salt in the soil
- Soil- and geochemical parameters
- Topographical survey

Chobe Region, Botswana *Field Research*

July 2000 - September 2000

I planned and carried out extensive fieldwork in the remote village of Kavimba, northern Botswana. The data obtained were used as the basis for a groundwater model, simulating the feasibility of a planned well field to supply the Chobe villages with water.

INTERNATIONAL COLLABORATION

National Center for Groundwater Research and Training, AU (NCGRT) 2010 - current

Close and ongoing relations with the largest Groundwater Center in the Southern hemisphere:

- Prof. C. Simmons, director of NCGRT. We are currently working on three projects, and I am co-supervising 2 of his PhD students. Prof. Simmons visited Neuchâtel in April 2011. Based on the highly productive and ongoing co-operation between NCGRT and University of Neuchâtel, a formal agreement of co-operation is now being prepared between the two universities.
- Prof. P. Cook, deputy director of NCGRT is an authority on isotope and field oriented hydrology. I am closely collaborating with 2 postdocs under his supervision. Following my invitation, he visited Neuchâtel in 2010 and presented his Darcy lecture.

- Prof. J. Doherty: he is the authority in inverse modelling. In September 2010, he came to Neuchâtel to work with me on new calibration concepts. In 2011, I organized a course on inverse modelling in Neuchâtel, given by Prof. Doherty. We are currently working on 2 joint projects, and 2 more are in preparation.

University Laval, Quebec, Canada: Prof. R. Therrien **2008 - current**
Ongoing scientific co-operation with a key developer of HydroGeoSphere. Prof. Therrien and I have been working on several conceptual modeling projects. A method developed under my supervision during a PhD project in Australia is currently being implemented into HydroGeoSphere.

ETH Zurich, Switzerland: Prof. Wolfgang Kinzelbach **2006 - current**
Ongoing co-operation with Prof. Kinzelbach since my PhD.

Inst. of Fluid Mechanics in Civil Engineering, Uni Hannover **2009 - current**
Collaboration with Prof. T. Graf on modelling freshwater lenses under the Murray River.

Forschungszentrum Jülich, Germany: Prof. H. Franssen **2008 - current**
Ongoing scientific co-operation Prof. Franssen on data assimilation and modelling of surface water groundwater interactions.

EXTERNAL EXPERT **PhD expert commission:**

- F. Cochand: Assessment of Climate Change Impact: Use of a Groundwater and Surface Water Model in a Highly-Urbanized Catchment. University Laval, Canada. Defence 2.10.2014
- S. Alaghmand: Numerical modelling of surface water and groundwater flow and solute interactions between a river and a saline floodplain in semi-arid region. University of South Australia. Thesis despatched 25.3.2014
- C. Möck: Evaluating the effect of climate change on groundwater resources: from local to catchment scales. University of Neuchâtel. Defence: 11.11.2013
- W. Kurtz: Data Assimilation and River Aquifer Exchange. Forschungszentrum Jülich, Germany. Defence: 21.09.2013
- D. Glenz: Inverse modeling of groundwater flow in the Rhône alluvial aquifer Impact of the Third Rhône Correction University of Neuchâtel. Defence: 13.05.2013.
- A. Borghi: 3D stochastic modeling of karst aquifers using a pseudo-genetic methodology. University of Neuchâtel. Defence: February 22, 2013
- G. Preisig: Regional simulation of coupled hydromechanical processes in fractured and granular porous aquifer using effective stress-dependent parameters. Uni. of Neuchâtel. Defence: January 15th, 2013
- S. Jeannotat: Isotope fractionation of volatile organic compounds in porous media under variably saturated conditions. University of Neuchâtel. Defence: 14.12.2012

Funding agencies:

- *BeIPD-Marie Curie COFUND-scheme, University of Liege*: Reviewer for competitive research grants **2014**
- *Fonds de la Recherche Scientifique, Belgium*: Reviewer for competitive research grants **2014**
- *New Zealand Ministry of Business, Innovation and Employment*: Reviewer for competitive research grants **2014**
- *Belgium Research Council, University of Leuven*: Reviewer for competitive research grants **2014**
- *National Science Foundation, USA*: Review for a PhD proposal **2012**
- *University of Wageningen*: Review for a PhD proposal **2011**
- *Belgian Earth Observation Programme Stereo*: Review of a project proposal **2009**

Varia:

- SuMaRiO Project (Sustainable Management of River Oases along the Tarim River; <http://www.sumario.de/>): External expert, **2014**
- Young Academic Award Geoverbund, Germany: External expert **2014**

Book reviewer:

- Invited (2009) by the *International Journal of Applied Earth Observation and Geoinformation* to write a book review.

Modelling expert:

- *Government of New South Wales (AU)*: Review of a hydrological model (2009).

LANGUAGE SKILLS

German (Mother tongue)

English (Mother tongue)

French (Fluent)

Chinese (Intermediate oral, basic reading and writing skills- continuously being improved)

INTERNSHIPS

Eberhard Recycling AG, Switzerland *Engineering* **March 1998 - August 1998**

Internship in a soil recycling company. The duties included the sampling of contaminated soil as well as the handling of contaminated soil transports to the company.

REFERENCES

- **Prof. Wolfgang Kinzelbach**, Institute of Environmental Engineering ETH Zurich, CH-8093 Zürich, Switzerland. Tel: +41 44 6333066. E-mail: kinzelbach@ifu.baug.ethz.ch
- **Prof. Craig T. Simmons**, Director, NCGRT, Adelaide 5001, Australia. Tel: 61-8-82015509. E-mail: craig.simmons@flinders.edu.au
- **Prof. Peter Cook**, Deputy director of NCGRT, Adelaide 5001, Australia. Tel: 61-8-82015509. E-mail: peter.cook@flinders.edu.au