

# DAVID GRANJON

Principal Scientist and Consultant, Novartis AG

- Founder of [RinteRface](#)
- R Shiny advocate



## EDUCATION

2013-  
2016

### PhD in Life Sciences

Thesis title: "Modeling of Calcium Homeostasis in the Rat and its Perturbations". Building of a mathematical model describing calcium homeostasis, including its analysis and simulation of pathologies. Advisors: Dr. Aurélie Edwards and Pr. Olivier Bonny.

📍 Université Pierre et Marie Curie, Paris, Université de Lausanne, Switzerland

2011-  
2013

### Master's Degree in Ecosciences, MIV

Main subjects: Mathematics, Theoretical Ecology and Programming.

📍 Université Claude Bernard (UCBL), Lyon

2010-  
2011

### Licence (3 year degree) in Mathematics and Computer Sciences for the Living (MIV)

Main subjects: Mathematics, Ecology and Computer Sciences.

📍 Université Claude Bernard (UCBL), Lyon

2008-  
2010

### Preparatory School for Engineers

Main subjects: Mathematics, Physics, Biology, Geology.

📍 Lycée Claude Fauriel, Saint Etienne

## PROFESSIONAL EXPERIENCE

06/17  
|  
06/19

### Post Doctoral Researcher

Software engineer 📍 The Interface Group, University of Zurich (UZH)

Two main projects:

- develop user-friendly interfaces of Calcium and Phosphate Homeostasis, using the R-Shiny package, javascript and C. Management of linux web servers. Design new interactive tools dedicated to teaching courses.
- build a model linking the cardiac and renal functions, to better understand the interplay between chronic kidney disease as well as cardiac failure. Create virtual patient populations using Monte Carlo simulations.

01/17  
|  
03/17

### Post Doctoral Researcher

Improvements to the model developed during my doctoral thesis.

Publication of a second article (see publications). Supervisors:

Dr. Aurélie Edwards and Pr. Olivier Bonny.

📍 CHUV, Lausanne university hospital, Switzerland

## CONTACT INFO

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🌐 [DivadNojnarg](#)

🏠 [Blog](#)

🏠 [RinteRface](#)

🐦 [divadnojnarg](#)

## SKILLS

**Data Analysis:** R

**Web development:** {Shiny}, Java-Script, React, HTML, CSS, Postman (http requests)

**Reporting:** {bookdown}, {rmarkdown}, {pagedown}, Latex

**Workflow:** Git, github-actions, Travis, {renv}, {golem}, {devtools}, {profvis}, {usethis}, {testthat}, ...

**Script:** Bash

## LANGUAGES

French (native)

English (C1)

07/13  
|  
08/13

### Internship in a Team of Theoretical Physiology

Improvements to the model developed during the previous internship. Supervisors: Dr. Moisés Santillan, Pr. Michael Mackey

📍 Centre for Applied Mathematics in Bioscience and Medicine (CAM-BAM), Mc Gill University, Montreal, Canada.

01/13  
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07/13

### Internship in a Laboratory of Applied Mathematics

Project title: "Multiscale modeling of Zebrafish Somitogenesis" Development of a model accounting for the intra-cellular oscillator in each cell during somitogenesis. Supervisors: Dr. Laurent Pujo-menjouet (UCBL), Pr. Michael Mackey (Mc Gill, Canada).

📍 Institut National de Recherche en Informatique et Automatique (INRIA), Team Dracula, Lyon

03/12  
|  
07/12

### Internship in a Laboratory of Applied Mathematics

Project title: "Mathematical modeling of somitogenesis, reaction-diffusion systems". Analysis of two mathematical models: cell-cycle and clock/wavefront models. Supervisor: Dr. Laurent Pujo-Menjouet (UCBL).

📍 Institut National de Recherche en Informatique et Automatique (INRIA), Team Dracula, Lyon

06/11  
|  
08/11

### Internship in a Laboratory of Theoretical Ecology

Project title: "Ecotoxicology of Daphnia Magna". Study of the impact of pollution on the growth of Daphnia Magna through mathematical models. Supervisors: Pr. Sandrine Charles (UCBL), Pr. Marie Laure Delignette Muller (Ecole Nationale Vétérinaire de Lyon).

📍 Laboratoire de Biométrie et Biologie Evolutive (LBBE), Team Modélisation et Ecotoxicologie Prédictive (MEPS), Lyo

## 📖 PUBLICATIONS

2019

### An eLearning platform to teach calcium and phosphate homeostasis

Submitted to American Journal of Physiology-Advances in Physiology Education.

D. Granjon, O. Bonny, F. Verrey, V. Kurtcuoglu and D. de Zelicourt.

2017

### Coupling between Phosphate and Calcium Homeostasis: A Mathematical Model

American Journal of Physiology-Renal Physiology, 313(6): F1181-F1199. doi: 10.1152/ajprenal.00271.2017

D. Granjon, O. Bonny, A. Edwards.

2016

### A Model of Calcium Homeostasis in the Rat

American Journal of Physiology-Renal Physiology, 311 (5): F1047-F1062. doi: 10.1152/ajprenal.00230.2016

D. Granjon, O. Bonny, A. Edwards.

## 📖 BOOKS

2020

### Outstanding User Interfaces with Shiny

This book provides the necessary knowledge to extend Shiny's layout: <https://divadnojnarg.github.io/outstanding-shiny-ui/>.

D. Granjon

## Contacts

Dr. Aurélie Edwards

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Dr. Laurent Pujo-Menjouet. +33

472 431 008


Dr. Diane de Zélicourt. +41 (0) 44

635 50 56

Pr. Vartan Kurtcuoglu. +41 (0) 44

635 50 55

## R packages




Develop outstanding {shiny} apps for iOS, Android and desktop.

code available

CRAN 0.1.0

## CONFERENCES AND TALKS


- 14/03/2020  
**satRdayNeuch 2020**  
Oral presentation: An introduction to shinyMobile:  
<https://github.com/DivadNojnarg/satRdayNeuch2020>.  
📍 Remote (Covid 2019)
- 29/01/2020  
**Zurich R User Group**  
Oral presentation: "shinyMobile: Build Native Looking Shiny Apps:  
<https://rinterface.com/shiny/talks/zurichR2020/index.html#slide=1>.  
📍 Zurich
- 05/12/2019  
**BaselR**  
Oral presentation: "Development of a web application to represent models of calcium and phosphate homeostasis using R."  
📍 Basel
- 08/2019  
**Shiny Developers Series**  
Podcast interview: "Production-ready UIs for Shiny:  
<https://shinydevseries.com/post/episode-4-rinterface/>.  
📍 Online
- 09/07/19  
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12/07/19  
**useR 2019**  
Poster presentation: "A Shiny Powered Virtual Patient: <https://github.com/DivadNojnarg/userR2019>.  
📍 Toulouse
- 27/05/19  
**Zurich R User Group**  
Oral presentation: "Rinterf, Production-ready UIs for Shiny:  
<https://rinterface.com/shiny/talks/zurichR2019/index.html#slide=1>.  
📍 Zurich
- 31/01/19  
|  
01/02/19  
**NCCR Kidney.CH Retreat 2019**  
Oral presentation: "Web applications for physiology: bridge the gap between research and teaching".  
📍 Murten, Switzerland
- 09/09/18  
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12/09/18  
**NCCR Kidney.CH Summer School 2018**  
Poster first author: "Web-based e-learning tools of Calcium and Phosphate Homeostasis".  
📍 Zurich, Switzerland
- 08/07/18  
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12/07/18  
**World Congress of Biomechanics 2018**  
Poster first author: "Addressing biomedical diversity via eLearning, an example from a physiology curriculum".  
📍 Dublin, Ireland
- 01/02/18  
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02/02/18  
**NCCR Kidney.CH Retreat 2018**  
Poster first author: "A web-based application of Calcium and Phosphate Homeostasis".  
📍 Murten, Switzerland
- 17/10/17  
**Bachelor-Themenworkshops 5. Semester HS 2017**  
Oral presentation: Computational Physiology.  
📍 Zurich University of the Arts, Switzerland
- 29/06/16  
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1/07/16  
**Meeting of the Federation of Physiological Societies and the French Physiological Society**  
Poster presentation: "Role of the rapidly exchangeable calcium pool in bone in calcium homeostasis".  
📍 Centre de Recherche des Cordeliers, Paris



Bootstrap 4 shinydashboard using AdminLTE3.

code available

CRAN 0.5.0



Extensions for shinydashboard.

code available

CRAN 0.7.0

23/03/16  
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24/03/16

### **Annual Franco-Swiss Meeting on Electrolytes Metabolism and Renal Physiology**

Oral presentation: "A model of Ca/Pi homeostasis in the Rat".

📍 Inselspital, Bern

25/02/16  
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27/02/16

### **NCCR Kidney.CH Retreat 2016**

Poster first author: "Role of the bone rapidly exchangeable calcium pool in calcium homeostasis".

📍 Murten, Switzerland

29/09/15  
|  
02/10/15

### **Société Francophone de Dialyse/Société de Néphrologie**

Poster first author: "Consequences of primary hyperparathyroidism on renal calcium excretion".

📍 Lyon, France

19/03/15  
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20/03/15

### **Annual Franco-Swiss Meeting on Electrolytes Metabolism and Renal Physiology**

Oral presentation: "A Model of Calcium Homeostasis in the Rat".

📍 Centre de Recherche des Cordeliers, Paris

19/03/14  
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20/03/14

### **Annual Franco-Swiss Meeting on Electrolytes Metabolism and Renal Physiology**

Oral presentation: "A Simplified Model of Plasma Calcium Regulation by PTH".

📍 CHUV, Lausanne

3/06/13  
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6/06/13

### **Conference " In honour of Michael Mackey's 70th birthday**

Oral presentation: "Oscillatory dynamic during zebrafish somitogenesis".

📍 Lyon, France



## **AWARDS**

2019

### **2019 RStudio Shiny Contest**

- Runner-Up prize: A Virtual Lab for Teaching Physiology.

Link: <https://community.rstudio.com/t/shiny-contest-submission-a-virtual-lab-for-teaching-physiology/25348>

2019

### **NCCR Kidney.CH Retreat 2018**

- Best Poster Award, 2nd prize: A web-based application of Calcium and Phosphate Homeostasis.

N/A

This resume was made with the R package **pagedown**.

Last updated on 2020-06-03.