Jules Berlin Nde Kengne

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Education

- **Graduate student in Physics – Ph.D., August 2021 – expected in December 2023,**
  University of Washington,
  - **Advisor: Professor Margaret S. Cheung**

- **Graduate student in Physics – Ph.D., Jan 2019 – August 2021,**
  University of Houston; Center for Theoretical Biological Physics at Rice University (Transferred)
  - **Advisor: Professor Margaret S. Cheung**

- **Graduate student in a Master program in Materials Science and Engineering,**
  University of Houston, Aug 2018 – Jan 2019

- **M.S. in Computational Physics and Materials Science** – University of Yaoundé 1, Sept 2013

- **B.S. in Physics** – University of Yaoundé 1, Cameroon, July 2011

Awards:

APS Division of Biological Physics (DBIO) Student Travel Award (March 2021)

Research Projects:

Research Assistant, Department of Physics, University of Washington, August, 2021 – present.
Protein folding/binding mechanisms, case of Calmodulin (CaM) and Calmodulin binding targets (CaMBTs): Our goal is to build a computational approach that models the dynamics of Ca^{2+}-CaM and to use it to study the binding mechanism between Ca^{2+}-CaM and CaMBTs; **Protein-protein interactions and protein assembly**

- **Advisor: Professor Margaret S. Cheung**

Research Assistant, Department of Physics, University of Houston, December, 2018 – August, 2021.
Protein folding/binding mechanisms, case of Calmodulin (CaM) and Calmodulin binding targets (CaMBTs): Our goal is to build a computational approach that models the dynamics of Ca^{2+}-CaM and to use it to study the binding mechanism between Ca^{2+}-CaM and CaMBTs

- **Advisor: Professor Margaret S. Cheung**

Research Assistant, Department of Biochemistry and Molecular Biology, University of Texas Medical Branch (UTMB) at Galveston, Oct 2014 - March 2018.
Method of detecting and repairing DNA double-strand breaks (DSBs) throughout the genome: We aimed on developing the computational and statistical models to detect the DNA-DSBs throughout the genome.

- **Advisor: Professor Maga Rowicka**

Researcher, University of Yaoundé 1, Oct 2012 – Jun 2014
Computational study of Fe-Cu and Fe-Cr multilayers: Our goal was to use a computational approach to investigate the structural and magnetic properties of Fe/Cu/Fe multilayers and to compare the results with the experiments.

- **Advisor: Professor Serge Sylvain Zekeng**

Teaching experience

Teaching Assistant, University of Houston, TX, USA Fall 2019 – Sprint 2021

- Physics laboratory, PHYS 1121
- Modern Physics, PHYS 3315

Teaching Assistant, University of Yaoundé I, Cameroon Oct 2012 - Jun 2014

- Tutored Bachelor 1 students in practical works of electrostatics, mechanics and magnetostatics;
- Tutored Bachelor 3 students in practical works of statistical physics and programming;
- Assisted in grading test and term papers Bachelor 1 and 3.

Teacher, Petou private high school Yaoundé, Cameroon, Sept 2009- May 2014

- Lecturer in physics and chemistry
  Taught physics and chemistry, 7^{th}, 8^{th}, 9^{th}, and 10^{th} grade
- Tutored in physics and chemistry
  Tutored physics and chemistry, 7^{th}, 8^{th}, 9^{th}, and 10^{th} grade

Publications

- **Jules Nde**, Pengzhi Zhang, Jacob C. Ezerski, Wei Lu, Kaitlin Knapp, Peter G. Wolynes, Margaret S. Cheung, Coarse-grained Modeling and Molecular Dynamics Simulations of Ca^{2+}-calmodulin, Front. Mol. Biosci. (2021) doi:10.3389/fmolb.2021.661322
- Abhishek Mitra, Norbert Dojer, Bernard Fongang, **Jules Nde**, Yingjie Zhu, Maga Rowicka: Analyzing and interpreting DNA double-strand break sequencing data bioRxiv, (2020) doi: https://doi.org/10.1101/2020.03.05.977801
- Yingjie Zhu, Anna Biernacka, Benjamin Pardo, Norbert Dojer, Romain Forey, Magdalena Skrzypczak, Bernard Fongang, **Jules Nde,** Razie Yousefi, Philippe Pasero, Krzysztof Ginalski, and Maga Rowicka: qDSB-Seq is a general method for genome-wide quantification of DNA double-strand breaks using sequencing. Nature Communication, (2019) 10:2313
- A Biernacka, Y. Zhu, M. Skrzypczak, R. Forey, B. Pardo, M. Grzelak**, J. Nde**, A. Mitra, A. Kudlicki, N. Crosetto, P. Pasero, M. Rowicka, and K. Ginalski: i-BLESS: Ultra-sensitive detection of DNA double-strand breaks using agarose beads. Communication Biology, (2018) 1:181
- **Jules Berlin Nde Kengne**, Bernard Fongang, and Serge Zekeng, Structural properties of Fe/Cu magnetic multilayers: a Monte Carlo Approach. SPIN/2018/1850012
- Wei Shi, Therese Vu, Didier Boucher, Anna Biernacka, **Jules Nde** Pandita RK, Straube J, Boyle GM, Al-Ejeh F, Nag P, Jeffery J, Harris JL, Bain AL, Grzelak M, Skrzypczak M, Mitra A, Dojer N, Crosetto N, Cloonan N, Becherel OJ, Finnie J, Skaar JR, Walkley CR, Pandita TK, Rowicka M, Ginalski K, Lane SW, Khanna KK, Ssb1 and Ssb2 cooperate to regulate mouse haematopoietic stem and progenitor cell function by resolving replicative stress in vivo BLOOD/2016/725093.
- Mitra A, Dojer N, Fongang B, **Nde J**, Yingjie Zhu, Maga Rowicka, Analyzing and interpreting DNA double-strand break sequencing data. Nature protocols (NP-PI170302), under reviewer.

- Y. Zhu, N. Dojer, A. Biernacka, B. Pardo, R. Forey, M. Skrzypczak, B. Fongang, **J. Nde**, R. Yousefi, G. Legube, P. Pasero, K. Ginalski, and M. Rowicka: Quantitative DSB sequencing (qDSB-Seq): a method for genome-wide accurate estimation of absolute DNA double strand break frequencies per cell, **bioRxiv**, 171405, doi:https://doi.org/10.1101/171405 (2017).
- Y. Zhu, A. Biernacka, B. Pardo, R. Forey, N. Dojer, **J. Nde**, B. Fongang, R. Yousefi, A. Mitra, J. Li, M. Skrzypczak, A. Kudlicki, P. Pasero, K. Ginalski, and M. Rowicka* (corresponding author): Integrated analysis of DSB patterns precisely reveals DSB mechanisms following replication fork collapse, **bioRxiv**, 171439, doi:https://doi.org/10.1101/171439 (2017).

Manuscript in preparation

Professional memberships:

- Member of the American Physical Society (APS) 2019-
- Member of the Biophysical Society (BPS) 2019-
- Member of the Cameroon Physical Society (CPS) 2014-
- Member of the International Society for Computational Biology (ISMB) 2015-2018.

Conferences and seminars

- Poster presentation at APS March Meeting, Virtual, USA (March 2021)
- Poster presentation at BPS Annual Meeting, Virtual, USA (Feb. 2021)
- Poster presentation at Rice-UT Science Weekend, BRC Houston, USA (Nov. 2019)
- Poster presentation at CPS conference in Yaoundé, Cameroon (2017)
- Attended ISMB conference in Dublin, Ireland (2015) with poster presentation
- Attended Scientific Retreat organized by Biochemistry and Molecular Biology (BMB) department at UTMB Galveston TX, USA 2015 and 2016 with posters presentation.

Skills

- Bioinformatics
- Programming using C++, Perl, Python, JavaScript, CGI, MySQL, Matlab and R
- French: native
- English: proficient