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# Mutaz M. Jaber

jaber038@umn.edu

1245 Ray Place  
Falcon Heights MN 55108, United States  
Phone: +1 651-706-5202

Personal website: <https://mutaz94.github.io>  
Google scholar: Mutaz M. Jaber  
GitHub: mutaz94

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## Research interest

Pharmacometrics, Nonlinear mixed-effect approach, Absorption models, computational statistics, estimation algorithms, Machine learning

## Programming skills

R (adv), Python (adv), shell (adv), C/C++ (intermediate), julia (intermediate), FORTRAN (basic)

## Education

Experimental and Clinical Pharmacology, PhD - University of Minnesota 2020-current  
Emphasis: Pharmacometrics

Minor: Statistics

Advisor: Richard C. Brundage, PharmD, PhD

Co-advisor: Mahmoud Al-kofahi, DDS, PhD

Overall GPA: 3.95

Doctor of Pharmacy, PharmD - Jordan University of Science and Technology 2012-2018  
Department of Clinical Pharmacy  
College of Pharmacy

## Research experience

Graduate research assistant - University of Minnesota 2020 - current

Advisor: Richard C. Brundage, PharmD, PhD

Project(s):

- Methodology research - Uncertainty in NLME approach, Machine learning
- Clinical research - Hydrocortisone Pump for congenital adrenal hyperplasia patients

Pharmacometrics GDD intern - Novartis June 2021 - Aug 2021

Mentor: Matt Fidler, PhD

Project: Simulation uncertainty in NLME approach

Postdoctoral Associate - University of Minnesota 2019-2020

Supervisor: Richard C. Brundage, PharmD, PhD

Project(s):

- Hydrocortisone pharmacokinetics/pharmacodynamics
- Mathematical modeling of circadian rhythms
- Tools development: HydroC-Precision
- Absorption models

Postgraduate researcher - Jordan University of Science and Technology 2018 - 2019

Supervisor(s): Mera Ababneh, PharmD, PhD; Sayer AlAzzam, MSc, PharmD

Project(s):

- Antimicrobial stewardship
- Pharmacostatistics models in pharmacoepidemiological research
- Seasonal Influenza vaccination in Jordan

Student research assistant - Jordan University of Science and Technology  
Project(s):

2017 - 2018

- Autism, and ADHD pediatric research
- Protein chemical analysis

## Clinical experience

Pharmacy intern - Drug information center (KAUH)

May, 2018-July, 2018

Clinical pharmacy rotation - KAUH

Sep, 2017 - May, 2018

Pharmacy intern - KHCC

Jan 2017 - Mar 2017

## Teaching experience

- Minnesota pharmacometrics summer school: Population approach and NONMEM

## Awards

- ACCP/ISoP Student abstract award

ACCP annual meeting 2020

## Scientific software development

- HydroC-Precision: Integrated hydrocortisone PKPD platform for children with CAH.
- NCA-ADAPT: Open-source program to conduct a pharmacokinetic non-compartmental analysis.
- ABS-NN: Program to classify absorption shapes using neural networks.

## Publications

- [1] **Jaber, Mutaz M.**, S. Cheng, and R. C. Brundage. "Evaluation of bias in weighted residual calculations when handling below the limit of quantification data using Beal's M3 method". en. In: (), p. 4.
- [2] H. Al-Rayess, O. Y. Addo, E. Palzer, **Jaber, Mutaz M.**, K. Fleissner, J. Hodges, R. Brundage, B. S. Miller, and K. Sarafoglou. "Bone Age Maturation and Growth Outcomes in Young Children with CAH Treated with Hydrocortisone Suspension". In: *Journal of the Endocrine Society* 6.2 (2022), bvab193.
- [3] **Jaber, Mutaz M.**, B. Yaman, K. Sarafoglou, and R. C. Brundage. "Application of Deep Neural Networks as a Prescreening Tool to Assign Individualized Absorption Models in Pharmacokinetic Analysis". en. In: (2021), p. 11.
- [4] M. Al-Kofahi, M. A. Ahmed, **Jaber, Mutaz M.**, T. N. Tran, B. A. Willis, C. L. Zimmerman, M. T. Gonzalez-Bolanos, R. C. Brundage, and K. Sarafoglou. "An integrated PK-PD model for cortisol and the 17-hydroxyprogesterone and androstenedione biomarkers in children with congenital adrenal hyperplasia". en. In: *Br J Clin Pharmacol* 87.3 (Mar. 2021), pp. 1098–1110. ISSN: 0306-5251, 1365-2125. DOI: 10.1111/bcp.14470. URL: <https://onlinelibrary.wiley.com/doi/10.1111/bcp.14470> (visited on 05/02/2021).

- [5] H. Al-Rayess, O. Y. Addo, E. Palzer, **Mutaz Jaber**, K. Fleissner, J. Hodges, R. Brundage, B. S. Miller, and K. Sarafoglou. "Hydrocortisone Suspension Provides Similar Growth Outcomes as Hydrocortisone Tablets in Young Children With Congenital Adrenal Hyperplasia: A Cross Sectional Study". In: *Journal of the Endocrine Society* 5 (2021).
- [6] T. Takahashi, **Jaber, Mutaz M.**, A. R. Smith, P. A. Jacobson, J. Fisher, and M. N. Kirstein. "Predictive Value of C-Reactive Protein and Albumin for Temporal Within-Individual Pharmacokinetic Variability of Voriconazole in Pediatric Hematopoietic Cell Transplant Patients". In: *The Journal of Clinical Pharmacology* (2021).
- [7] T. Takahashi, M. A. Mohamud, A. R. Smith, P. A. Jacobson, **Jaber, Mutaz M.**, A. F. Alharbi, J. Fisher, and M. N. Kirstein. "CYP2C19 Phenotype and Body Weight-Guided Voriconazole Initial Dose in Infants and Children after Hematopoietic Cell Transplantation". en. In: *Antimicrob Agents Chemother* 65.9 (Aug. 2021). ISSN: 0066-4804, 1098-6596. DOI: 10.1128/AAC.00623-21. URL: <https://journals.asm.org/doi/10.1128/AAC.00623-21> (visited on 11/11/2021).
- [8] M. Ababneh, **Jaber, Mutaz**, A. Rababa'h, and F. Ababneh. "Seasonal influenza vaccination among older adults in Jordan: prevalence, knowledge, and attitudes". en. In: *Human Vaccines & Immunotherapeutics* 16.9 (Sept. 2020), pp. 2252–2256. ISSN: 2164-5515, 2164-554X. DOI: 10.1080/21645515.2020.1718438. URL: <https://www.tandfonline.com/doi/full/10.1080/21645515.2020.1718438> (visited on 05/02/2021).
- [9] M. A. Ababneh, **Jaber, Mutaz**, A. Rababa'h, and E. Alabweny. "Prevalence of antimicrobial use in a tertiary academic hospital: a venue for antimicrobial stewardship programs". en. In: *Expert Review of Anti-infective Therapy* (Dec. 2020), pp. 1–5. ISSN: 1478-7210, 1744-8336. DOI: 10.1080/14787210.2021.1863789. URL: <https://www.tandfonline.com/doi/full/10.1080/14787210.2021.1863789> (visited on 05/02/2021).
- [10] **Jaber, Mutaz M.**, M. Al-Kofahi, K. Sarafoglou, and R. C. Brundage. "Individualized Absorption Models in Population Pharmacokinetic Analyses". en. In: *CPT Pharmacometrics Syst. Pharmacol.* 9.6 (June 2020), pp. 307–309. ISSN: 2163-8306, 2163-8306. DOI: 10.1002/psp4.12513. URL: <https://onlinelibrary.wiley.com/doi/abs/10.1002/psp4.12513> (visited on 05/02/2021).
- [11] M. Al-Kofahi, P. Jacobson, D. R. Boulware, A. Matas, R. Kandaswamy, **Jaber, Mutaz M.**, R. Rajasingham, J.-A. H. Young, and M. R. Nicol. "Finding the Dose for Hydroxychloroquine Prophylaxis for COVID-19: The Desperate Search for Effectiveness". en. In: *Clin. Pharmacol. Ther.* 108.4 (Oct. 2020), pp. 766–769. ISSN: 0009-9236, 1532-6535. DOI: 10.1002/cpt.1874. URL: <https://onlinelibrary.wiley.com/doi/10.1002/cpt.1874> (visited on 05/02/2021).
- [12] H. Al-Rayess, K. Fleissner, **Jaber, Mutaz**, R. C. Brundage, and K. Sarafoglou. "Manipulation of Hydrocortisone Tablets Leads to Iatrogenic Cushing Syndrome in a 6-Year-Old Girl With CAH". en. In: *Journal of the Endocrine Society* 4.8 (Aug. 2020), bvaa091. ISSN: 2472-1972. DOI: 10.1210/jendso/bvaa091. URL: <https://academic.oup.com/jes/article/doi/10.1210/jendso/bvaa091/5867523> (visited on 05/02/2021).
- [13] K. Sarafoglou, **Jaber, Mutaz M.**, M. Al-Kofahi, and R. C. Brundage. "Hydrocortisone suspension formulations are not necessarily the same in the treatment of children with congenital adrenal hyperplasia". en. In: *European Journal of Endocrinology* 183.6 (Dec. 2020), pp. L27–L28. ISSN: 0804-4643, 1479-683X. DOI: 10.1530/EJE-20-0938. URL: <https://ej.e.bioscientifica.com/view/journals/eje/183/6/EJE-20-0938.xml> (visited on 05/02/2021).

## Posters & abstracts

- [14] S. Cheng, **Jaber, Mutaz M.**, D. R. Flora, T. S. Tracy, A. Rettie, and R. C. Brundage. "Model-based analysis of the CYP2C9 genotype impact on the fluconazole inhibition of the commonly prescribed drugs flurbiprofen, ketoprofen, and tolbutamide". In: *2021 Annual American College of Clinical Pharmacology meeting* (2021).
- [15] **Jaber, Mutaz M.** and R. C. Brundage. "Investigating Components of Residual Unexplained Variability in Nonlinear Mixed-Effect Modeling". In: *Population Approach Group Europe* (2021). DOI: 10.13140/RG.2.2.26809.49765.

- [16] **Jaber, Mutaz M.**, T. Takahashi, M. N. Kirstein, P. Jacobson, and R. C. Brundage. "Population Pharmacokinetic Analysis of Phosphoramidate Mustard Following Cyclophosphamide Administration in Hematopoietic Cell Transplant Conditioning Therapy". In: *2021 Annual American College of Clinical Pharmacology meeting* (2021). DOI: 10.13140/RG.2.2.23454.05445.
- [17] **Jaber, Mutaz M.**, K. Sarafoglou, M. Al-Kofahi, and R. C. Brundage. "Application of a Deep Learning Algorithm as a Prescreening Tool to Assign Individualized Absorption Models in a Population Pharmacokinetic Analysis". In: *11th American conference on Pharmacometrics* (2020).
- [18] **Jaber, Mutaz M.**, K. Sarafoglou, M. Al-Kofahi, and R. C. Brundage. "HydroC-Precision: An Integrated Hydrocortisone Dosing and Biomarker Platform for Treating Children with Congenital Adrenal Hyperplasia". In: *2020 Annual American College of Clinical Pharmacology meeting* (2020). DOI: 10.1002/cpdd.858.

## Presentations & talks

- Investigation the Contribution of Residual Unexplained Variability Components in NLME approach  
PAGE 2021 & ECP 2021
- Simulation with Uncertainty in NLME approach Novartis 2021
- Application of Deep Learning in Pharmacokinetic Analysis ECP 2020
- HydroC-Precision: An Integrated Hydrocortisone Dosing and Biomarker Platform for Treating Children with Congenital Adrenal Hyperplasia ACCP 2020

## Professional service

- Minnesota Pharmacometrics Summer School 2020: Planning Committee Member
- International Society of Pharmacometrics: Student Committee Member
- Doctor of Pharmacy Toward Optimum Patient Care Campaign
- Cooperative Group of Medical Profession (CGMP)
- Jordan University of Science and Technology Student Union 2015-2016: Class representative to 12 batch

## Professional society

- American Society of Clinical Pharmacology
- International Society of Pharmacometrics
- Society for Industrial and Applied Mathematics
- American Statistical Association - Pharmacometrics