

Max Winshell A Fontus

Curriculum Vitae

Prairie View A&M University
Texas Undergraduate Medical Academy
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Cypress, Texas 77433
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EDUCATION:

- 2007: **Ph.D.** in Chemistry, Indiana University Bloomington Campus, Bloomington, Indiana 47405
Topic: “Simulating the Electrometabome”
Advisor: Peter J. Ortoleva
Major Field of Study: Theoretical Physical Chemistry
Minor Field: Mathematics
- 2001: **M.A.** in Mathematics, Indiana University Bloomington Campus, Bloomington, Indiana 47405
Topic: “Dynamical Systems “
Advisor: Alberto Torchinsky
Major Field of Study: Mathematics
- 1999: **B.S.** in Mathematics, Pennsylvania State University, State College, Pennsylvania, 16802
Minor Field: Biochemistry and Molecular Biology
- 1996: **A.S.** in Mathematics, Essex County College, Newark, New Jersey 07102
Minor Field: Chemistry

Employment:

- 2017 – Present Undergraduate Medical Academy – **UMA**, Assistant Director
- 2007 – Present **UMA**, Faculty Member Prairie View A&M University, PVAMU
- 2010 – 2017 Assistant Professor (Tenure-Track) of Chemistry, Chemistry Department, PVAMU
Assigned Classes:
CHEM 1043 General Inorganic Chemistry
CHEM 3413 Physical Chemistry Lecture
CHEM 4051 Research Independent Study
CHEM 5783 Advanced Physical Chemistry (Graduate Course)
- 2007 – 2010 Assistant Professor (Non-Tenure) of Chemistry, Chemistry Department, PVAMU
Assigned Classes:
CHEM 1032 General Inorganic Chemistry Laboratory I
CHEM 1033 General Inorganic Chemistry

CHEM 1042 General Inorganic Chemistry Laboratory II
CHEM 1043 General Inorganic Chemistry

2002 – 2007 **Research Assistant**, Center for Cell and Virus Theory, Indiana University

- Development and Implementation of Electrometabolome Simulator with Application to *G. sulfurreducens* Microbial Fuel cell and *Trypanosoma brucei*
- Tested and Implemented Simulator for Spherical Cellular Division

2004 Assistant Instructor, Indiana University Bloomington, Bloomington, Indiana 47405

2003 – 2004 Tutor for All Levels of Undergraduate Mathematics, Indiana University Bloomington, Bloomington, Indiana 47405

2003 – 2004 Assistant Professor (Adjunct), Ivy Tech State College, Bloomington, Indiana 47403

2002 GRE Math Instructor, Indiana University Bloomington, Bloomington, Indiana 47405

1999 – 2001 Assistant Instructor for pre-Algebra, Algebra, Pre-Calculus, Calculus, Trigonometry, Indiana University Bloomington, Bloomington, Indiana 47405

1998 Research Laboratory Assistant, Penn state University, PSU, State College, Pennsylvania 16802

Internships:

1998 Mathematically Advanced Semester Studies, MASS, PSU, State College, Pennsylvania 16802.
Conducted research in the area of group symmetries and representations for regular n-gons

Publications:

Book Manuscripts:

Fontus, Max. General Chemistry 1: Chem 1033. Austin, TX: Sentia Publishing, 2016. Print and Ebook. ISBN: 9780996300490, ISBN10: 099630049X

Fontus, Max. General Chemistry 2: Chem 1043. Austin, TX: Sentia Publishing, 2015. Print and Ebook. ISBN: 9780996646475

Articles:

Brekke, G.D., **Fontus, M.**, & Giraud, J.M.B. (2019). Fighting with Infinity: A Proposal for the Addition of New Terminology. In M. Shelley & V. Akerson (Eds.), Proceedings of IConSES 2019-- International Conference on Social and Education Sciences (pp. 32-44). Monument, CO, USA: ISTES Organization.

Brekke, G., **Fontus, M.** and Giraud, J. (2017) Fighting with Infinity: A Proposal for the Addition of New Terminology. Novembertagung 2017.

McGowen, T., and **Fontus, M.** (2017) Proposing Drug Target(s) to Combat Trypanosoma Infection. PURSUE Undergraduate Research Journal, Vol. 1, Issue 1, p. 25 – 39.

Fontus, M. and Ortoleva, P. “Electrometabolomics modeling of microbes: Applications in fuel cells and environment analysis.” *Journal of Biotech Research* 3 (2011): 37- 50. Print.

Abdeljawad, F., **Fontus, M.** and Haataja, M. “Ductility of bulk metallic glasses composites: microstructural effects.” *Appl. Phys. Let.* 98 (2011): 031909-1 – 031909-3. Print.

Abdeljawad, F., **Fontus, M.** and Haataja, M. (2010) Dendritic microstructure effects on bulk metallic bulk metallic glasses (BMG) composites. Accepted for the “Bulk Metallic Glasses VIII” 2011 Symposium

D. Daniels, W. Wyatt, and **M. Fontus** “A Texas Response to the Sullivan Commission: The Undergraduate Medical Academy Model” *Journal of the National Medical Association* 102(1) (2010): 61 – 64. Print.

P. Ortoleva, P. Adhangale, S. Cheluvaraja, **M. Fontus**, A. Roy, and Z. Shreif “Deriving principles of microbiology by multiscaling laws of molecular physics: applications in nanomedicine and energy.” *IEEE Engineering in Medicine and Biology* (2009): 70-79. Print.

Ortoleva P, Berry E., Fan J., **Fontus M.**, Navid A., Sayyed-Ahmad Z., Sharif Z., Stanley F., Tuncay K., Weitzke E., and Wu I. “ Karyote physico-chemical genome, proteome, metabolome cell modeling system.” *Omics: A Journal of Integrative Biology* 7.3 (2004): 269 – 283. Print.

Fontus M. and Adrian Ocneanu “ Groups, symmetries, representations theory and tensor products”, *The Penn State McNair Journal* 5 (1998): 43-55. Print.

Book Chapter:

Fontus, M., and Ortoleva, P. “Electrophysiological-metabolic modeling of microbes: Applications in microbes and environmental analysis.” *Microbial systems biology: Methods and protocols*. Ed. Ali. Navid. New York: Humana Press, 2012. 411-431. Print.

Abdeljawad, F., **Fontus, M.** and Haataja, M. “Dendritic microstructure effects on bulk metallic bulk metallic glasses (BMG) composites.” Accepted for the “Bulk Metallic Glasses VIII” 2011 Symposium.

Works in Progress:

Articles:

Fontus, M. “Fermat: the road less traveled.” This work has been reviewed and it is in the final stage of review before submission.

Fontus, M et. al. “Simulating the electrometabolome with application to *Trypanosoma brucei*”

Edited Works Manuscripts:

Awards:

2013 *Faculty Senate* Honor Recipient

2013 *Civic Service Award* at Greater Emmanuel Family Worship Center

2011 *Five-Year Service Award* at Prairie View A&M University

2010 *Featured in Prairie View A&M University Newsletter in Fall*

- 2010 as a result of collaborative work with Dr. Mikko Haataja at Princeton University
- 2010 Featured in Princeton University Newsletter in Summer 2010 issue as a result of collaborative work with Dr. Mikko Haataja at Princeton University
- 2010 Undergraduate Medical Academy Outstanding Faculty Award
- 2004 – 2005 GAANN Fellowship, Indiana University Bloomington, Bloomington, Indiana 47405
- 1999 – 2004 McNair Fellowship, Indiana University Bloomington, Bloomington, Indiana 47405
- 1999 Holtzinger Endowed Scholarship, Penn State University, State College, PA 16802
- 1999 Academic Scholarship Award, Penn State University, State College, PA 16802
- 1999 Minorities In Science & Technology Participation and Service Award, Penn State University, State College, PA 16802
- 1999 Student Support Services Program Persistence and Academic Achievement Award, Penn State University, State College, PA 16802
- 1999 Minorities In Science & Technology Outstanding Academic Performance Award, Penn State University, State College, PA, 16802
- 1998 McNair Achievement Certificate, Penn State University, State College, PA 16802
- 1998 Mass Program Outstanding Seminar Presentation, Penn State University, State College, PA 16802
- 1998 Bunton-Waller Scholarship, Penn State University, State College, PA 16802
- 1997 – 1998 Dean's List, Penn State University, State College, PA
- 1994 – 1996 Dean's List, Essex County college, Newark, NJ

Certifications:

Certified online Instructor (Prairie View A&M University)

Community Emergency Response Team (C.E.R.T.) Certified

Professional Memberships:

- 2014 – Present Pharmaceutical Review Journal
- 2010 - Present American Chemical Society - ACS
- 2009 – Present National Organization for the Professional Advancement of Black Chemists and Chemical Engineers – NOBCChE.

Conference Papers/Posters/Presentations:

- 2015 REH/REU Poster Presentation
- 2015 REH/REU Poster Presentation
- 2014 Presenter at the *Thurgood Marshall College Fund Member-Universities Professional Institute, MUPI*, conference

- 2013 Presenter of The Road Less Travelled: Proof of Fermat’s Last Theorem at the *Thurgood Marshall College Fund **MUPI*** conference
- 2012 Presenter at the Mathematics Lecture series at PVAMU of Proof for Fermat’s Last Theorem
- 2012 Presenter of Photoelectric Effect Revisited at QEM’s PDM meeting
- 2009 Started the First Nanotechnology Lecture Series at Prairie View A&M University featuring guest speakers Stephen Jacobson, Martin Jarrold, Peter Ortoleva, and James Reilly
- 2011 Attended and Presented at QEM – **Quality Education for Minorities’** joint meeting of Participants in the Faculty Professional Development Institute (LDI) Cohort II with the QEM HBCU-UP Education Research Project’s Advisory Committee
- 2010 Presenter at Leadership Development Institute – LDI – Symposium, Washington, D.C.

Other Conference Activities:

- Apr 2010 National Science Foundation Tribal College Review Panelist

Other Professional Activities:

- 2021 – Present Collaborator at University of Kansas, Lawrence, KS 66045
- 2020 – Present Dental Admission Test Constructor
- 2018 – Present Optometry Admission Test Constructor
- 2016 Refereed article manuscript for publication for Scientific Reports, a journal of Nature Publishing Group
- 2014 Oak Ridge National Lab *Higher Education Research Experiences, HERE*, participant
- 2014 *Attended* QEM – **Quality Education for Minorities’** Professional Development and Mentoring (PDM) Meeting
- 2014 Attended QEM’s Education Research Project Professional Development and Mentoring Program Session VI
- 2009 – 2013 Collaborative Research in Chemistry – CRC- NSF Project Collaborator at Indiana University, Bloomington, IN 47405
- 2011 *Introducing Science Faculty to Materials Science and Engineering Summer Outreach program for HBCU*, University of Alabama, Tuscaloosa, AL 35487
- 2011 Attended AAAS Annual Meeting “Science Without Borders”
- 2011 Attended QEM’s HBCU-UP Leadership Development Institute (LDI) for STEM Faculty Cohort II: Session Two at Faculty Early Career – CAREER
- 2011 Attended QEM’s HBCU-UP Education Research Project Faculty Professional Development and Mentoring (PDM) program
- 2011 Attended QEM’s CAREER Proposal Workshop

2009 – 2010 Quality Education for Minority – QEM- Network Leadership
LDI Member, Washington, D.C. 89002
2010 PRISM Visiting Research Faculty, Princeton University,
Princeton, New Jersey, 07010

University Service:

2016 – 2017 Faculty Senator, PVAMU
2016 – Present REU/REH Summer Research Mentor at PVAMU
2015 Graduate Research Mentor at PVAMU
2015 REU/REH Summer Research Mentor at PVAMU
2008 – 2014 Faculty Senator, PVAMU
2010 – 2014 *STEAM* – Science Technology Engineering Agriculture and
Mathematics judge

Division Service:

2016 – Present Academic Ambassador – Peer-to-Peer tutoring program,
Developer, PVAMU
2015 Seminar Committee, Chemistry Department, PVAMU
2015 Recruitment Outings with Recruitment Unit, Chemistry
Department, PVAMU
2015 Undergraduate Research Mentor at UMA research lab
2015 - Present Medical Academy Student Research Center, MARSC,
Coordinator, PVAMU
2016 Oversaw UMA students progress and summer plans
2015 Chaired search committee for senior recruiter at the Texas
Undergraduate Medical Academy
2010 Chaired Search Committee for the Texas Undergraduate Medical
Academy Assistant Director position

Community Service:

2014 – Present Greater Emmanuel Family Worship Center – GEFWC Executive
Board Member
2015 – 2019 GEFWC Under-shepherds overseeing four other ministries
2016 American Chemical Society Project SEED Summer Research
Mentor at PVAMU
2009 – 2015 Greater Emmanuel Family Worship Center Educational and
Technology – EduTech, ministry Director
2014 Fairfield Athletic Club volleyball Coach
2010 PRISM speaker for youth Summer Program at Princeton
University
2009 YMCA Soccer Coach

INTERESTS

- Theoretical Chemistry
- Computational Chemistry
- Nanotechnology

- Nanomedicine
- Bio-Electrophysiology Modeling
- STEM Education
- Microbial Fuel Cell

COMPUTER SKILLS

Operating Systems: Windows, Mac OS X, Unix, Linux, VMWare
Programming Languages: Fortran, C++, Java
Software: Mathematica, Xgraph, Matlab, Maple, TecPlot

REFERENCES

Available Upon Request