

# Dejenie A. Lakew (Ph.D.) (Vitae)

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Assistant Professor

Department of Mathematics

Hampton University

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## Education

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- **Ph.D.**, Mathematics, University of Arkansas, Fayetteville.
  - **M. Sc.**, Mathematics, Addis Ababa University, Ethiopia.
  - **B. Sc.**, Mathematics, Addis Ababa University, Ethiopia.
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## Research Interests

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- Clifford analysis, functional analysis and operator theory, PDEs, ODEs.
- Active in research and publications, including reviewer and editor
- External Examiner of PhD dissertation.

## Teaching Experience

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### Hampton University, Professor (Asst.)

- **Undergraduate:** Precalculus, Calculus, Statistics, Probability, Modern Algebra/Advanced Mathematics.
- **Graduate:** Functions of a complex variable

### Virginia Union University (Associate professor & Interim department chair)

- Differential equations, discrete mathematics, calculus for business, introduction to statistics, trigonometry, College algebra.
- Advisor for Students' Individual Projects.

### Virginia State University (Assistant professor)

- Finite mathematics, Calculus, Basic mathematics, College algebra, Trigonometry.

### **University of Arkansas at Pine Bluff (Assistant professor)**

- Differential equations with mathematical modeling, abstract/modern algebra, discrete mathematics, linear algebra, calculus, trigonometry, college algebra.

- **Stratford University (Full time faculty)**

Statistics, modern mathematics with algebra, college algebra, fundamentals of mathematics.

- **John Tyler Comm. Coll.; Bryant & Stratton Coll.**

Business statistics, statistics, calculus, precalculus, college algebra.  
Advisor for Students' Projects in Statistics.

### **Addis Ababa University (Lecturer)**

- Introduction to real analysis (graduate course), complex variables, abstract algebra, linear algebra, calculus.

### **Asmara University (Assistant lecture & lecturer)**

- Abstract algebra, linear algebra, calculus, college algebra, calculus.

### **Leadership Skill/Committee Service**

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- Interim chair of the department of mathematics, Virginia Union University.
- Chairperson to both faculty search and curriculum committees of the department.
- Member of the president's advising committee at Virginia Union University.

### **Awards & Recognition**

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- Hampton University, School of Science Symposium Presentation, 2021.
- Peer reviewed mathematics journal reviewer and editor.
- External examiner for mathematics PhD dissertation, Addis Ababa University, Mathematics Department
- Graduate teaching assistant position – University of Arkansas.
- Summer doctoral fellowship – University of Arkansas.
- Marquis Who's Who in the world, in science.

### **Research/Selected Publications**

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- An infinite order ordinary differential operator, 2019, Preprint.
- On transcendental solutions and the discrete Laplace transform, 2019 (**Preprint**) to be submitted.

- On orthogonal components of solutions to Cauchy boundary value problems of higher orders, 2019 (**preprint**) to be submitted.
- On orthogonal decomposition of a Sobolev space, **Adv. Oper. Theory**, Vol. 2, No. 4 (2017) 419-427, **arXiv**: 1611.04249.v1, Nov. 14, 2016.
- New proofs of properties of orthogonal decomposition of a Hilbert space, **arXiv**: 1510.07944v1, Oct. 27, 2015.
- On orthogonal decomposition of a Hilbert space  $\mathcal{L}^2(\Omega)$ , **Int. J. of Math. Comp. Sci.**, Vol. 10, No. 1 (2015) 27-37; **arXiv**: 1503.01209v1, 2015.
- Clifford analysis on Orlicz-Sobolev spaces, **arXiv** : 1409 : 8380v1, 2014 (with Mulugeta Alemayehu).
- Norm estimates for solutions of elliptic BVPs of the Dirac operator, **arXiv**: 1401: 3904v1, 2014.
- The Fibonacci sequence via the  $\Sigma$  - transform, **arXiv**: 1401 : 0243v1, 2014.
- The intrinsic  $\pi$  - operator on domain manifolds in  $\mathbb{C}^{(n+1)}$ , **Comp. Anal. Oper. Theory**, Vol. 4, No. 2 (2010) 271-280 (with John Ryan).
- The spherical  $\pi$  operator, **arXiv**: 0811: 3257v1, 20 Nov 2008.
- $W_{\{Cl_n\}^{2,k}}$ -best approximation of a  $\gamma$  - regular function, **J. Appl. Anal.**, Vol. 13, No. 2 (2007) 259-273.
- Complete function systems and decomposition results arising in Clifford analysis, **Comp. Meth. Function Theory**, CMFT, No1 (2002) 215-228 (with John Ryan).
- Complete function systems and decomposition results arising in Clifford analysis, **Progress in Analysis**: Proceedings of 3<sup>rd</sup> International ISSAC congress Vol. 1 (2001) 325-336 (with John Ryan).
- Clifford analytic complete function systems for unbounded domains, **Math. Meth. Appl. Sci.**, Vol. 25(2002) 1527 - 1539 (with John Ryan).
- Over determined problems for elliptic equations, **Proceedings of the 4th Int. Coll. on Differential Equations**, VSP, Inter. Sci. Pub., The Netherlands, 1994: 11 – 20 (with Giovanni Porru).

### Selected Presentations

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- 2021 School of Science Symposium Presentation, Why Mathematics.
- 2020 Faculty Seminar Presentation, Department of Mathematics, Hampton University, On Orthogonal Components of Solutions to Cauchy boundary value problems of higher orders.
- 2019 Faculty Seminar Presentation, Department of Mathematics, Hampton University, On Orthogonal Components of a Solution to a Cauchy BVP over a Hilbert Space of higher regularity.
- 2019 Faculty seminar presentation, Stratford University, Newport News, Why Mathematics?
- 2018 American Mathematical Society Joint Mathematics Meeting, San Diego, CA, Jan 10 -13, On Orthogonal Decomposition of a Sobolev Space.
- Virginia Commonwealth University, department of mathematics & applied mathematics, analysis, logic and physics seminar, Oct. 16, 2015: "On orthogonal decomposition of a Hilbert space".
- 1022nd American Mathematical Society Special Session on "Dirac operators in analysis and geometry", Nov. 3 - 4; 2006; University of Arkansas, Fayetteville: "The intrinsic  $\pi$  - operator on domain manifolds".

- Departmental colloquium presentation at VSU, Oct. 2006: "Finite  $Cl_{\{n\}}$  - minimal functions to approximate a  $\gamma$ - regular function".
- American Mathematical Society, Joint Mathematics Meeting, Jan. 7 - 10; 2004, Phoenix Arizona: "Best approximation of a  $\gamma$  - monogenic function over certain Sobolev spaces".
- 63rd annual meeting of the Mathematical Association of America (MAA), Oklahoma-Arkansas Section, March 30 - 31; 2001: " $\mathcal{L}^{\{p\}}$  - approximations".
- 62nd Annual Meeting of the MAA of Oklahoma-Arkansas Section, March 31-April 1; 2000: "Elliptic BVPs and  $Cl_{\{n\}}$  - complete function systems".
- Departmental Seminar on my doctoral thesis at the University of Arkansas-Fayetteville: "First and higher order BVPs and Clifford analytic complete function systems in the Bergman spaces  $B^{\{p\}}(\Omega, Cl_{\{n\}})$  and  $B^{\{p, l\}}(\Omega, Cl_{\{n\}})$ ".
- 61st Annual Meeting of the MAA of Oklahoma-Arkansas Section, March 26 - 27; 1999: " $Cl_{\{n\}}$  - complete function systems over unbounded Lipschitz domains in  $\mathbb{R}^n$ ".

#### Extra professional experience and training

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- Reviewer/Editor for the following peer reviewed mathematical journals:
  - **Int. J. Theor. Appl. Math. (Editor)**
  - **Parana J. Sci. Ed. (Editor)**
  - **Contemporary mathematics.**
  - **Boundary value problems.**
  - **Journal of function spaces.**
  - **Contemporary physics.**
- Received certificates for more than **20** professional/pedagogical courses including on **moodle**.
- Certificates from Center for Excellence in Education, **MaxKnowledge**.

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