Lũ' Hùng

Department of Mathematics, College of Natural & Computational Sciences, Hawai'i Pacific University

Email: hlu@hpu.edu **Phone:** +18085441134 **Skype:** hung.tim1 **Office :** Model Progress 254

Faculty Position at Hawai'i Pacific University from 2007 to the present day

- Assistant Professor of Mathematics from 2007–2012
- Associate Professor of Mathematics from 2012–present

Education from the University of California at Riverside from 1997 to 2007

- Bachelor of Science in Pure Mathematics in 2001
  Senior Honor Thesis on the *Riemann zeta function and Prime Number Theorem*
  Thesis Mentor Professor Michel Lapidus
- Master of Science in Mathematics in 2002
- Doctor of Philosophy in Mathematics in 2007
  Dissertation on p*-adic fractal strings and their complex dimensions*
  Thesis Advisor Professor Michel Lapidus

Teaching Mathematics at Hawai'i Pacific University from 2007 to 2017

- Elementary Algebra, Intermediate Algebra, Linear Algebra, Abstract Algebra, Geometry, Topology, Differential Equations, Real Analysis, Complex Analysis, Calculus, pre-Calculus, Statistics, Engineering Statistics, Survey of Mathematics, Mathematics for Making Decisions, Mathematics Education Practicum, How numbers shape our lives?, Elementary Number Theory, Cryptology, and Mathematical Cryptology.

Research Manuscripts in Mathematics and Math Education

1. Nonarchimedean Cantor Set and String (with Professor Michel Lapidus) in the
   Journal of Fixed Point Theory and Applications, Volume 3, Number 1, May 2008.
   (Special issue dedicated to the jubilee of the great Russian Mathematician Vladimir Igorevich Arnol'd)
2. Self-similar p-adic fractal strings and their complex dimensions (with Professor Michel Lapidus)
   in a journal by the Russian Academy of Sciences and Springer-Verlag,
   p*-Adic Numbers, Ultrametric Analysis and Applications,* Volume 1, Number 2, April 2009.
3. The Geometry of p-Adic Fractal Strings: A Comparative Survey (with Professor Michel Lapidus) in the Proceeding of the 11th Annual International Conference on p-Adic Functional Analysis,
   Advances in Non-Archimedean Analysis, Volume 551 of the American Mathematical Society's Contemporary Mathematics. 2011.
4. p-Adic Fractal Strings and their Complex Dimensions (with Professors Michel Lapidus and Machiel van Frankenhuijsen), Section 13.2 of the second edition of the Springer Monographs in Mathematics, *Fractal Geometry, Complex Dimensions and Zeta Functions: Geometry and Spectra of Fractal Strings* by Michel Lapidus and Machiel van Frankenhuijsen. 2013.
5. Minkowski Measurability and Exact Tube Formulas for p-Adic Self-Similar Fractal Strings
   (with Professors Michel Lapidus and Machiel van Frankenhuijsen) in the American Mathematical Society's Contemporary Mathematics, *Fractal Geometry and Dynamical Systems in Pure and Applied Mathematics I.* 2013.
6. Students-Centered versus Instructor-Centered Approaches to Teaching Precalculus (with Tara Davis) in the journal *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies.* 2015.

7. Minkowski Dimension and Explicit Tube Formulas for p-Adic Fractal Strings (with Professors Michel Lapidus and Machiel van Frankenhuijsen) is submitted to the Proceeding of the 6th Annual International Conference on Analysis, Probability and Mathematical Physics on Fractals at Cornell University on June 13–17, 2017 . The conference proceeding will be published in the World Scientific's series on *Fractals and Dynamics in Mathematics, Sciences and Arts.*
8. Towards Adelic Fractal Strings and Global Complex Fractal Dimensions (with Professors Michel Lapidus and Machiel van Frankenhuijsen). This work is in progress.

Professional Developments

- Teach like a Superhero at Hawai'i Pacific University on March 20, 2015.
- Coursera's Online Course Statement of Accomplishment for the successful completion of a Massive Online Course "Introduction to Mathematical Thinking" taught by Professor Keith Delvin of Stanford University. June 30, 2105.
- Fellow of Teaching Inquiry Oriented Mathematics Establishing Support Online Workshop for Teaching Abstract Algebra for Understanding from September to December, 2015.
- Completed the Education Advancement Foundation and Academy of Inquiry Based Learning project "Teaching pre-Calculus for Understanding with Gentle Socratic Inquiry". January to May, 2016.

Professional Services

- I am coorganizing with Professors Machiel van Frankenhuijsen, Joe Chen and Robert Niemeyer an AMS Special Session on *Geometry, Analysis, Dynamics and Mathematical Physics on Fractal Spaces* at the 2019 Spring Central and Western Joint Sectional Meeting of the American Mathematical Society at the University of Hawai'i at Manoa on March 22–24, 2019.
- I coorganized with Professors Michel Lapidus, Machiel van Frankenhuijsen, Erin Pearse and John Rock an AMS special session on *Geometry and Analysis on Fractal Spaces* at the American Mathematical Society Western Section Meeting at the University of Hawai'i at Manoa on March 3–4, 2012.
- I coorganized with Professors Michel Lapidus, Machiel van Frankenhuijsen, Erin Pearse and John Rock a AMS special session on *Fractal Geometry, Dynamical Systems, Number Theory and Analysis on Rough Spaces* at the Western Section Meeting of the American Mathematical Society at the University of California at Riverside on November 7–8, 2009.
- I volunteered at the International Union for Conservation of Nature's World Conservation Congress in Honolulu, Hawai'i on September 5, 2016.

University Services

- Chair of the Mathematics Program's Hiring Committee at Hawai'i Pacific University, 2007–present
- Member of the Liberal Arts College Curriculum Review Committee, 2007–2008
- Coordinator of the 3-2 Mathematics-Engineering Program (with Dan Gefroh), 2008
- Coadvisor of Sciences-Technology-Engineering-Mathematics Club (with Tara Davis), 2014–2106
- Advisor of Math Honor Society Kappa Mu Epsilon, 2009–2011
- Coadvisor of Math Honor Society Kappa Mu Epsilon (with Tara Davis), 2014–2016
- Member of the General Education Curriculum Committee, 2010–2012
- Member of Undergraduate Curriculum Committee, 2011–2012
- Member of the Learning Assessment Committee, 2011–2014
- Member College of Natural and Computational Sciences' Faculty Promotion and Review Committee, 2014–2016

- Member of CNCS Scholarly Endeavor Program Committee, 2014
- Member of the Mathematics Department's Faculty Promotion and Review Committee, 2015–2017
- Member of CNCS Undergraduate Curriculum Committee, 2016–present
- Member of General Education Critical Thinking Assessment Project, 2017
- CNCS' Representative at the University Undergraduate Curriculum Committee, 2017–present

Presentations

- *p-Adic fractal strings and complex fractal dimensions*, 6th Cornell Conference on Analysis, Probability, and Mathematical Physics on Fractals at Cornell University on June 16, 2017
- *Minkowski Dimension and Explicit Tube Formulas for p-Adic Fractal Strings,* American Mathematical Society's Special Session on Fractal Geometry and Ergodic Theory at the University of Tennessee at Knoxville, March 22, 2014
- *p-Adic fractal strings, complex dimensions and zeta functions,* Hawai'i Conference in Algebraic Number Theory, Arithmetic Geometry and Modular Forms at the University of Hawai'i at Manoa, March 2012
- *Explicit tube formulas for p-adic self-similar strings and Minkowski measurability,* AMS Special Session on Geometry and Analysis on Fractal Spaces at the University of Hawai'i at Manoa, March 2012
- *Explicit tube formulas for p-adic fractal strings,* American Mathematical Society, Mathematical Association of America, . . . Joint Math Meetings in Boston, Massachusetts, 2012
- *Explicit tube formulas for p-adic fractal strings,* Scholarship Day at Hawai'i Pacific University, January 2012
- *A geometric theory of p-adic fractal strings,* AMS Western Section Meeting at the University of California at Riverside, 2010
- *Real and p-adic fractal strings and their complex dimensions* , Vietnam Institute of Mathematics, 2009
- *Self-similar p-adic fractal strings and their complex dimensions,* Fractal Connections Conference at the University of Iowa, 2008
- *Nonarchimedean Cantor Set and String,* American Mathematical Society, Mathematical Association of America, . . . Joint Math Meetings at the University of California at San Diego, 2008
- *Nonarchimedean Cantor Set and String,* New Mexico Analysis Seminar at the University of New Mexico, 2007
- *Nonarchimedean Cantor Set and String,* AMS Western Section Meeting at the University of New Mexico, Albuquerque, 2007
- *Nonarchimedean Cantor Set and String, p-Adic fractal strings and their complex dimensions* Scholarship Day at Hawai'i Pacific University, 2008, 2009, respectively.

Conferences

- 6th Cornell Conference on Analysis, Probability, and Mathematical Physics on Fractals, Cornell University, June 13–17, 2017
- Hawai'i Conference of Religions for Peace: Peace Education for the Youth, Palolo Hongwanji, 2014
- Uehiro Graduate Student Philosophy Conference, East-West Center in Hawai'i, 2013
- International Hermeneutics Conference, East-West Center in Hawai'i, 2013
- Hawai'i Conference in Algebraic Number Theory, Arithmetic Geometry and Modular Forms at the University of Hawai'i at Manoa, 2012
- Arithmetic Geometry: Diophantine approximation and Arakelov theory at Fields Institute in the University of Toronto, Canada, 2008

- Arithmetic of Modular Forms at the University of Hawaii at Manoa, 2008
- p-adic Geometry, Arizona Winter School at the University of Arizona, 2007
- Number Theory and Random Matrix Theory at Rochester University, 2006
- Analysis and Probability on Fractals at Cornell University, 2005
- Excursion in Computational Number Theory at Simon Fraser University, Canada, 2001

Further Education

- Introduction to Mathematical Thinking, Stanford University on Coursera, April 2015

Supports and Grants

- Cornell University, Summer 2017
- Academy of Inquiry Based Learning in Mathematics and Education Advancement Foundation, Spring 2015
- Teaching Inquiry-oriented Mathematics Establishing Support group, Teaching Abstract Algebra for Understanding, National Science Foundation project, 2015
- College of Natural and Computational Sciences' Scholarly Endeavor Program at HPU, Spring 2016
- Trustees' Scholarly Endeavors Program at Hawai'i Pacific University, 2008–2012
- Faculty Development Award at Hawai'i Pacific University, 2007, 2008, 2011, 2014, 2015
- Fields Institute at the University of Toronto, 2008
- Vigre Program at the University of Iowa, 2008
- Graduate Student Association at the University of California at Riverside, 2001–2007
- Eugene Cota Robles Fellowship of the University of California at Riverside, 2001–2005
- Department of Mathematics at the University of California at Riverside, 2001–2007

Community Volunteer

- Friends of Wai'alae School Fun Fair at Wai'alae Elementary Public Charter School on Saturdays April 2, 2016 and April 1, 2017
- Second International Conference on Language Documentation and Conservation, Honolulu, Hawai'i 2011
- American Mathematical Society, 2008, 2009, 2012, 2017
- Hawai'i State's Arts Museum in Honolulu, 2009
- Ma'o Organic Farm in Waianae 2009
- O'ahu Invasive Species Committee 2012

Professional Affiliations

- American Mathematical Society, member, 2001–present
- Vietnamese Professional Society, member, 2004–2005
- Discovering the Art of Mathematics, member, 2015–present

Professional References

- Professor Tara Davis at Hawai'i Pacific University, tdavis@hpu.edu
- Professor Michel Lapidus at the University of California at Riverside, lapidus@math.ucr.edu

- Professor Machiel van Frankenhuijsen at Utah Valley University, vanframa@uvu.edu

September 18, 2017