

# VICKY CHUQIAO YANG

Department of Engineering Sciences and Applied Mathematics  
Northwestern University  
2145 Sheridan Road, M410, Evanston, IL 60208-3125  
vcy@u.northwestern.edu  
847-491-8783

## Education

- |   |                    |
|---|--------------------|
| <b>PhD, Engineering Sciences and Applied Mathematics</b><br>Northwestern University, Evanston, IL<br>Research focus in Mathematical modeling of social systems<br>Admitted into candidacy August 2015 | Expected June 2018 |
| <b>Master of Science, Engineering Sciences and Applied Mathematics</b><br>Northwestern University, Evanston, IL   | June 2014          |
| <b>Bachelor of Science, Mathematical Sciences</b><br><b>Bachelor of Science, Physics</b><br>Worcester Polytechnic Institute (WPI), Worcester, MA<br>With high distinction                             | May 2013           |

## Awards and Fellowships

- |  |            |
|--|------------|
| • Walter Murphy Fellowship, Northwestern University  | Aug 2013   |
| • First place winner,<br>Student paper competition held by International Microwave Power Institute | June 2013  |
| • Second Place Winner, IEEE Student Paper Competition  | April 2013 |
| • Stephen Salisbury Prize for Outstanding Seniors, WPI   | April 2013 |
| • Provost's Major Qualifying Project Award, WPI  | April 2013 |
| • WPI's Putnam Competition Top Scorer  | April 2013 |
| • WPI Summer Undergraduate Research Fellowship   | April 2011 |
| • WPI Presidential Scholarship   | Aug 2009   |

## Publications

- E.M. Moon, C. Yang, and V.V. Yakovlev (2015) 'Microwave-induced temperature fields in cylindrical samples of graphite powder — experimental and modeling studies', *International Journal of Heat and Mass Transfer*, vol. 87, No 8, pp. 359-368.
- C. Yang and V.V. Yakovlev (2013) 'An efficient empirical model for microwave-induced average temperature of liquid cylindrical reactants', *Journal of Microwave Power and Electromagnetic Energy*, 47 (3), pp. 177-185.

## Publications in Preparation and Submission

- V.C. Yang, A.V. Papachristos, D.M. Abrams, 'The origin of scaling laws in urban outputs', in preparation.
- V.C. Yang, D.M. Abrams, A.E. Motter, 'Dynamics of political elections', in preparation.
- B.S. Tilley, V.C. Yang, J.C. Baiense, S. Evans, 'Frequency-dependent thermal resistance of vertical U-tube geothermal heat exchangers', submitted to *Journal of Engineering Mathematics*.

## Talks and Presentations

- ‘The origin of scaling laws in urban outputs’, poster presentation at *Dynamics Days US* (Durham, NC, Jan 2016).
- ‘Why bigger cities generate more inventions, crimes, and disease: a simple mathematical model’, talk at *Chicago Area SIAM Student Conference* (Chicago IL, April 2015).
- ‘Microwave-induced temperature fields in graphite powder heated in a waveguide reactor’, talk at *IEEE MTT-S International Microwave Symposium* (Tampa FL, June 2014).
- ‘Computation of microwave-induced temperature in liquid cylindrical reactants’, talk at *47th IMPI’s Microwave Power Symposium* (Providence RI, June 2013).
- ‘Microwave-induced heat transfer in cylindrical reactants with strong convection: a simple mathematical model’, talk at *IEEE Region 1 Student Conference* (Cambridge MA, April 2013).
- ‘A simple heat transfer model for reactors in microwave-assisted chemistry’, talk at *American Math. Society Student Conference* (Boston MA, April 2013).
- ‘Thermal and fluid dynamics modeling of wire-coil insert’, talk at *New York State Regional Grad. Math. Conference* (Syracuse NY, April, 2013); also talk at *Argonne National Laboratory and Fermilab* (Lemont and Batavia IL, Aug 2012).
- ‘Does having a foreign accent affect men and women differently? Effect of foreign accent and gender on employment decision and negotiations’, poster presentation at *New England Psychological Association Annual Conference*, (Worcester MA, Oct, 2012).

## Teaching Experience

|   |                       |
|---|-----------------------|
| <b>Argentine Tango Instructor</b> , NuTango, Northwestern University      | March 2016 - Present  |
| <b>Teaching Assistant</b> , Dept. of Mathematics, Northwestern University | Sept 2014 - June 2015 |
| <b>Undergraduate Teaching Assistant</b> , Dept. of Mathematics, WPI       | Aug 2011 - May 2013   |

## Leadership Positions

|   |                      |
|---|----------------------|
| <b>Co-founder and President</b><br>NuTango: Northwestern’s Argentine Tango Club                       | March 2015 - Present |
| <b>Vice President</b><br>Society for Industrial and Applied Math, Northwestern Chapter                | Oct 2015 - Present   |
| <b>Department Representative</b><br>Graduate Leadership and Advocacy Council, Northwestern University | Jan 2016 - Present   |
| <b>President</b><br>Pi Mu Epsilon, US Honorary National Mathematics Society, WPI Chapter              | May 2012 - May 2013  |

## Internship

|  |                      |
|--|----------------------|
| <b>Lee Teng Internship</b><br>Advanced Photon Source Engineering Support Division<br>Argonne National Laboratory, IL | June 2012 - Aug 2012 |
| • Worked with mechanical engineers and mathematicians on fluid and heat transfer problems.                           |                      |

## Computer and Programing Skills

Matlab, Python, Latex, Maple, Mathematica, C, SPSS, bash commands, NEK5000, QuickWave 3D, Windows OS, Mac OS, Linux OS.

## Selected Course Work

Differential equations of mathematical physics, numerical methods, stochastic processes, mathematical modeling, asymptotic analysis, quantum mechanics, social network analysis, machine learning.