CURRICULUM VITAE

DASHUN XU

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I. PROFESSIONAL AFFILIATION AND CONTACT INFROMATION

A. Present University Department: Department of Mathemacits

B. Office Address: 273 Neckers Hall A Wing; E-mail: dxu@math.siu.edu

II. EDUCATIOIN

1. Sep. 1989 - Jul.1993: B. Sc. in Mathematics, Hubei Institute for Nationalities, Hubei, China.

2. Sep. 1994 - Apr. 1997: M. Sc. in Applied Mathematics, Beijing Polytechnic University, Beijing, China.

3. Sep. 2001 - Jul. 2004: Ph. D. in Applied Mathematics, Memorial University of Newfoundland, St. John's, Canada.

III. PROFESSIONAL EXPERIENCE

1. Apr. 1997 - Aug. 1999: Lecturer in Dept. of Applied Math., Beijing Polytechnic University, Beijing, China.

2. Sep. 1999 - Aug. 2001: Research Fellow in Institute of Mathematics, Chinese Academy of Sciences, Beijing, China.

3. Jan. 2004 - May 2006: Visiting assistant professor in Dept. of Math., Purdue University, USA.

4. Aug. 2006 - May 2010: Assistant professor in Dept. of Math., Southern Illinois University Carbondale, USA.

5. Aug. 2010 - present: Associate professor in Dept. of Math., Southern Illinois University Carbondale, USA.

IV. RESEARCH AND CREATIVE ACTIVITY

A. Interests and Specialties: Mathematical Biology, Differential Equations and Dynamical Systems, and Applied Mathematics.

B. Current Projects:

1. Modeling complex dynamics of host-parasite interactions, supported by NSF (DMS-0719783);

2. Collaborative Research: Vulnerable Host Stages, Development Time, and Host-Parasitoid Stability - The First Experimental Test, supported by NSF (DEB-1021203).

C. Grants Applied for:

1. NSF (Biological Sciences, DEB) 2013 (Jan.23) (with professors in Departments of Math. and Zoology in SIU and LSU)
2. NSF (Biological Sciences, DEB) 2012 (Jan.9) (with professors in Departments of Math. and Zoology in SIU and LSU)
3. Faculty Seed Grant (Oct. 2010) (Modeling DNA networks)
4. NSF (Biological Sciences) 2010 (Jan. 13) (with professors in Departments of Math. and Zoology)
5. NSF (Biological Sciences) 2009 (Jan. 9) (with professors in Departments of Math. and Zoology)
6. NSF (Biological Sciences) 2008 (Jan. 21) (with professors in Departments of Plant Biology and Computer Science in SIUC)
7. NSF (Biological Mathematics) 2007 (Jan. 22)
8. Faculty Seed Grant(Oct. 2006)

D. Grants Received:

1. NSF grant (CoPI, DEB-1021203) effective from Sep. 1, 2010 to Aug. 31, 2013, extended to Aug. 31, 2014. http://www.nsf.gov/awardsearch/showAward?AWD_ID=1021203

2. NSF grant (PI, DMS-0719783) effective from Sep. 1, 2007 to Aug. 31, 2010, extended to Aug. 31 2011. http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=0719783

3. Start-up funds from the College of Science and the Dept. of Mathematics, 2006.

F. Papers and Presentations at Professional Meetings:

i. Presentations at Professional Meetings

1. 30-minute invited talk at the session "Adaptive Dynamics" of The Fourth Conference on Computational and Mathematical Population Dynamics, May29-June2, 2013. Taiyuan, Shanxi Province, P.R. China. The title of the talk: "Evolution of host resistance to parasite infection in the snail-schistosome-human system".
2. 30-minute invited talk at AMS Special Sessions on Mathematical Models in Biology and Physiology, Oct. 5-6, 2013. Uni. of Louisville, Louisville, KY. The title of the talk: "Modeling a host-parasitoid system".
3. 40-minute talk at "International Symposium On Delay Differential Equations" in Hunan University, Changsha, China, June 15-18, 2012. The title of the talk: "Interactions among virulence, coinfection and drug resistance in a complex life-cycle parasite".
4. 50-minute talk at "Integrated Modeling and Analysis of Within-host Infection and Between-host Transmission for Toxoplasma gondii" sponsored by the National Institute for Mathematical and Biological Synthesis (NIMBioS) and organized by Zhilan Feng, Dana Mordue, Chunlei Su, and Xiaopeng Zhao. University of Tennessee in Knoxville, Tennessee. May 16-18, 2011.

5. 30-minute talk at AMS Special Session on Structured Models in Ecology, Evolution, and Epidemiology: Periodicity, Extinction, and Chaos, in New Orleans, LA, January 6-9, 2011. The title of the talk: "Interactions among virulence, coinfection and drug resistance in a complex life-cycle parasite"
6. 25-minute talk at " The Second International Conference on Mathematical Modeling and Analysis of Populations in Biological Systems" in Huntsville, Alabama, Oct. 9-11, 2009. The title of the talk: "Evolution of Schistosome's drug resistance and Virulence".
7. 20-minute talk at the "Joint Conference of the Society for Mathematical Biology (USA) and the Chinese Society for Mathematical Biology" in Hangzhou, China, June 14-17, 2009. The title of the talk: "On the role of age-targeted treatments in the evolution of drug resistant schistosome".
8. 25-minute talk at the conference titled "Differential Equations and Applications in Ecology and Epidemiology" in West Lafayette, IN, Dec. 8-Dec. 10, 2008. The title of the talk: "On the role of age-targeted treatments in the evolution of drug resistant schistosome".
9. 30-minute talk at the special session on "Mathematical Biology: Modeling, Analysis, and Simulations" of the 1044th AMS Meeting, Huntsville, Alabama, Oct. 23 - Oct.25, 2008. The listed title of the talk: "On the role of age-targeted treatments in the evolution of drug resistant schistosome", but the actual title is "Distributed Development Times and Stability in Host-Parasitoid Models".
10. 30-minute talk at DIMACS Computational and Mathematical Epidemiology Workshop (titled "Modeling the Impact of Policy Options during Public Health Crises") in Banff, Canada, July 27, 2008. The title of the talk: "Using Age-structured Models to Examine Age-targeted Control Strategy".
11. 25-minute talk at the special session "Dynamical systems in Biology and Medicine" of the 7th AIMS International Conference on Dynamical Systems, Differential Equations and Applications, Arlington, Texas, USA, May 18, 2008. The title of the talk: "On the role of schistosome mating structure in the maintenance of drug resistant strains".
12. 20-minute talk at MITACS Biomedical Theme Meeting, Banff International Research Station, Banff, Canada, Oct. 22nd, 2003.
13. 30-minute talk at The Fourth Geoffrey J. Butler Memorial Conference, University of Alberta, Edmonton, Canada, Oct. 18th, 2003.
14. 30-minute talk at the Symposium on Dynamical Systems (CMS Summer Meeting, June 14-16, 2003, Edmonton), Canada, June 14th, 2003.
15. 50-minute talk at the International Workshop on Nonlinear Dynamical Systems with Applications (July 15-18, 2002, St. John's), Canada, July 17th, 2002.

V. PUBLICATIONS AND CREATIVE WORKS

B. Articles in Professional Journals:

1. M-Q Xiao, J. D. Reeve, D. Xu, J. T. Cronin, 2013. Estimation of the diffusion rate and crossing probability for biased edge movement between two different types of habitat. *Journal of Mathematical Biology*, 67: 535–567.
2. D. Xu, D. J. Minchella, G. J. Sandland, Z. Feng, 2012. Interactions among virulence, coinfection and drug resistance in a complex life-cycle parasite. *Journal of Theoretical Biology*, 304: 197-210.
3. Y. Yang, Z. Feng, D. Xu, G. Sandland, D. J. Minchella, 2012. Evolution of host resistance to parasite infection in the snail-schistosome-human system. *J. Mathematical Biology*, 65: 201-236.
4. A. Min, J. D. Reeve, M. Xiao, and D. Xu, 2012. Identification of diffusion coefficient in nonhomogeneous landscapes. *Lecture Notes in Computer Sciences*, Springer, vol. 7664, pp. 290–297.
5. D. Xu, J. D. Reeve, X. Wang and M.-Q. Xiao, 2010. Developmental variability and stability in continuous-time host-parasitoid models. *Theoretical Population Biology*, 78(1): 1-11.
6. D. Xu and Z. Feng, 2009. A metapopulation model with local competitions. *Discrete and Continuous Dynamical Systems (Series B)*, 12(2): 495-511.
7. Z. Feng, Y. Yang, D. Xu, P. Zhang, M. M. McCauley, J. W. Glasser, 2009. Timely identification of optimal control strategies for emerging infectious diseases. *J. Theoretical Biology*, 259: 165-171.
8. Y. Yang, D. Xu, Z. Feng, 2008. Analysis of a model with multiple infectious stages and arbitrarily distributed stage durations. *Mathematical Modelling of Natural Phenomena*, 3(7): 180-193.
9. C. Castillo-Chavez, Z. Feng and D. Xu, 2008. A schistosomiasis model with mating structure and time delay. *Math. Biosci.*, 211: 333-341.
10. P. Zhang, G. Sandland, Z. Feng, D. Xu, and D. Minchella, 2007. Evolutionary implications for interactions between multiple strains of host and parasite. *J. Theoretical Biology*, 248: 225-240.
11. Z. Feng, D. Xu, and H. Zhao, 2007. Epidemiological models with non-exponentially distributed disease stages and applications to disease control. *Bulletin of Mathematical Biology*, 69(5): 1511-1536.
12. D. Xu, Z. Feng, L. Allen and R. K. Swihart, 2006. A spatially structured metapopulation model with patch dynamics. *Journal of Theoretical Biology*, 239, 469-481.
13. D. Xu, J. Curtis, Z. Feng and D. J. Minchella, 2005. On the role of schistosome mating structure in the maintenance of resistant strains. *Bulletin for Mathematical Biology*, 67: 1207-1226.
14. D. Xu and X.-Q. Zhao, 2005. Dynamics in a periodic competitive model with stage structure. *Journal of Mathematical Analysis and Applications*, 311: 417-438.
15. D. Xu and X.-Q. Zhao, 2005. Asymptotic speed of spread and traveling waves for a nonlocal epidemic model. *Discrete and Continuous Dynamical Systems Series B*, 5: 1043-1058.

16. D. Xu, 2005. Global dynamics and Hopf bifurcation of a structured population model. *Nonlinear Analysis: Real World Applications*, 6: 461-476.
17. D. Xu and X.-Q. Zhao, 2004. Bistable waves in an epidemic model. *Journal of Dynamics and Differential equations*, 16: 679-707.
18. D. Xu and X.-Q. Zhao, 2003. A nonlocal reaction-diffusion population model with stage structure. *Canadian Applied Mathematics Quarterly*, 11: 303-319.
19. Z. Jing, D. Xu, Y. Chang and L. Chen, 2003. Bifurcations, chaos, and system collapse in a three-node power system. *International Journal of Electrical Power and Energy Systems*, 25: 443-461.
20. Z. Jing, K. Y. Chan, D. Xu and H. Cao, 2001. Bifurcations of periodic solutions and chaos in Josephson system, *Discrete and Continuous Dynamical Systems*, 7(3): 573-592.
21. D. Xu and D. Meng, 1998. The model and simulation of inhibition in the extrinsic path of blood coagulation: the dynamic effects of protein C, *Acta Biophysica Sinica* (Chinese), 14, 657-665.

VI. TEACHING EXPERIENCE

A. Teaching Interests and Specialties: Graduate and undergraduate math courses.

D. Current Graduate Faculty Statues: regular member

E. Number of Master's and Ph.D. Committees on which you have served:

Supervised one Master thesis (Calsey Nave), served as a Ph. D. committee member for Min A. and Elizabeth Haynes, Dabin Ding (Computer Science) and a Master committee member for Q. Wang and Yahya Dabab.

G. Other: Advising the project of an undergraduate student (Payton Lindsay) for his honor program.

VII. UNIVERSITY SERVICE

A. Departmental Committees: Math Field Day (2007, 2008, 2009, 2010, 2011, 2012, 2013); Graduate Committee (2012); Undergraduate Programs Committee (2013).

VIII. PROFESSIOINAL SERVICE

A. Membership in Professional Associations: Members of American Mathematical Society (AMS).

D. Evaluation of Manuscripts for Journals:

1. SIAM J. Appl. Math.
2. Journal of Mathematical Analysis and Applications
3. Nonlinear Analysis Series A: Theory, Methods & Application

4. Nonlinear Analysis Series B: Real World Applications
5. Nonlinear Analysis: Hybrid Systems
6. Electronic Journal of Differential Equations
7. Journal of Dynamics and Differential Equations
8. Discrete and Continuous Dynamical System - B
9. Applicable Analysis
10. Journal of Mathematical Biology
11. Journal of Theoretical Biology
12. Bulletin of Mathematical Biology
13. Theoretical Population Biology
14. Mathematical Biosciences
15. Ecological Complexity
16. Mathematical Biosciences and Engineering
17. Journal of Biological Systems
18. Journal of Biological Dynamics
19. Mathematical and Computer Modelling
20. Mathematics and Computers in Simulation
21. International Journal of Biomathematics
22. Mathematical Population Studies: An I. J. of Mathematical Demography
23. The International Journal of Tuberculosis and Lung Disease

F. Other

- Organized a special session "Evolution Dynamics in Ecology and Epidemiology" of the 7th AIMS International Conference on Dynamical Systems, Differential Equations and Applications, Arlington, Texas, USA, May 18, 2008.