Schedule
Workshop on Mathematical Biology and
Nonlinear Analysis, December 19-21 2014

FRIDAY DECEMBER 19, 2014

07:45AM Bus pick up at Marriott Dadeland

08:00AM – 08:45AM Breakfast and Registration Cox Science Building Foyer
08:45AM – 09:00AM **Welcome Cox 126**

09:00AM – 10:00AM **Plenary Talk 1 Cox 126** (Chair: Chris Cosner)
        Simon Levin, *Critical transitions in space and time*
10:00AM – 10:30AM Break

Invited Talks
Session 1A Cox 126
10:30AM – 11:00AM Julián López Gómez, *The theorem of characterization of the maximum principle for periodic-parabolic systems of cooperative type and the existence of principal eigenvalues for a class of associated weighted boundary value problems*
11:00AM – 11:30AM Dan Munther, *Invading the ideal free distribution*

Session 1B Cox 145
10:30AM – 11:00AM Jianhong Wu, *Complex pathogen spread patterns induced by host range expansion*
11:00AM – 11:30AM Daozhou Gao, *Tragedy of the commons in antibiotic use*

Session 1C Cox 166
10:30AM – 11:00AM Alfonso Castro, *Existence of non-degenerate continua of singular radial solutions for several classes of semilinear elliptic problems*
11:00AM – 11:30AM Ratnasingham Shivaji, *Uniqueness of positive radial solutions for a class of semipositione problems on the exterior of a ball*

11:30AM – 1:00PM   Lunch

1:00PM – 2:00PM   **Plenary Talk 2 Cox 126** (Chair: TBA)
        Hal Smith, *How nested infection networks in bacteria-virus communities come to be*

2:00PM – 2:30PM   Break

Invited Talks
Session 2A Cox 126
2:30PM – 3:00PM   Xiaoqiang Zhao, *Propagation phenomena for a reaction-advection-diffusion competition model in a periodic habitat*
3:00PM – 3:30PM   Xing Liang, *Spreading speed of integro-difference models in periodic habitat*

Session 2B Cox 145
2:30PM – 3:00PM   Abdul-Aziz Yakubu, *Infectious fatal disease and demographic Allee effect*
3:00PM – 3:30PM   Zhilan Feng, *Modeling the synergy between HSV-2 and HIV and potential impact of HSV-2 therapy*

Session 2C Cox 166
2:30PM – 3:00PM   Dung Le, *Global existence of classical solutions to cross diffusion systems of more than 2 equations given on a planar   domain*
3:00PM – 3:30PM   King Yeung (Adrian) Lam, *Resident-invader dynamics in infinite-dimensional dynamical systems*

3:30PM-4:00PM Break

Invited Talks
Session 3A Cox 126
4:00PM – 4:30PM   Junping Shi, *Dynamics of logistic population model with mixed instantaneous and delayed density dependence and dispersal*
4:30PM – 5:00PM   Arnaud Ducrot*, Asymptotic behaviour of travelling waves for the delayed Fisher-KPP equation*
5:00PM – 5:30PM   Keng Deng, *Asymptotic behavior for a reaction-diffusion population model with delay*

Session 3B Cox 145
4:00PM – 4:30PM   Folashade B. Agusto, *Mathematical model of an age-structured transmission dynamics of Chikungunya virus*
4:30PM – 5:00PM   Lan Zou, *Modelling the transmission dynamics and control of Hepatitis B virus in China*
5:00PM – 5:30PM   Mayra Núñez López, *Superinfection between influenza and RSV alternating patterns in San Luis Potosí*

Session 3C Cox 166
4:00PM – 4:30PM   Donald L. DeAngelis, *Effects of dispersal on total biomass*

in a patchy, heterogeneous system: Analysis and experiment

4:30PM – 5:00PM   Carol Horvitz, *Transient elasticities and the expected effects of an insect bio-control on the short term dynamics of an invasive pest plant in Hawaii*

5:00PM – 5:30PM   Rongsong Liu*, An advection and age-structured approach to modeling bird migration and indirect transmission of avian influenza*

5:45 Bus pick up at Cox for Marriott Dadeland

SATURDAY DECEMBER 20, 2014

07:45AM Bus pick up at Marriott Dadeland

08:00AM – 09:00AM Breakfast Cox Science Building Foyer
09:00AM – 10:00AM **Plenary Talk 3 Cox 126** (Chair: TBA)
     Paul Rabinowitz, *Solution patterns for a phase transition model*

10:00AM – 10:30AM Break

Invited Talks
Session 4A Cox 126
10:30AM – 11:00AM Jerome Coville, *Persistence criteria in some nonlocal model in unbounded domain and applications*
11:00AM – 11:30AM Xiaoxia "Jessica" Xie, *Two types of nonlocal diffusions and the convergence to the random/normal diffusion*

Session 4B Cox 145
10:30AM – 11:00AM Yang Kuang, *A data-validated density-dependent diffusion model of glioblastoma growth*
11:00AM – 11:30AM Juan Gutierrez, *Hemodynamic model of malaria infection with detailed immune response*

Session 4C Cox 166
10:30AM – 11:00AM Raul Manasevich, *Solutions with a prescribed number of zeros   for a nonlinear elliptic equation with weights on R^d*
11:00AM – 11:30AM Afrah Abdou, *Common fixed point for infinite mappings in modular metric spaces*

11:30AM – 1:00PM Lunch

1:00PM – 2:00PM   **Plenary Talk 4 Cox 126** (Chair: TBA)
     Suzanne Lenhart, *Modeling of Johne's disease in dairy cattle*

2:00PM-2:30PM   Break

Invited Talks
Session 5A Cox 126
2:30PM – 3:00PM   Xingfu Zou, *On a R-D system for the sterile insect release method in a bounded domain*
3:00PM – 3:30PM   Oleg Makarenkov, *Topological degree in the generalized Gause prey-predator model*

Session 5B Cox 145
2:30PM – 3:00PM   Necibe Tuncer, *Identifiability issues in an immunological model*
3:00PM – 3:30PM   Karen R. Rios-Soto, *The estimation of epidemiological parameters for seasonal dynamics of Dengue Fever in Puerto Rico under incidence data*

Session 5C Cox 166
2:30PM – 3:00PM   Michael R. (Mike)" Kelly, *Optimal fish harvesting for a population modeled by a nonlinear, parabolic partial differential equation*
3:00PM – 3:30PM   Samares Pal, *Regime shifts in coral reefs under macroalgal toxicity and overfishing*

3:30PM-4:00PM Break

Invited Talks
Session 6A Cox 126
4:00PM – 4:30PM   Yihong Du, *Long-time behavior of nonlinear free boundary problems*
4:30PM – 5:00PM   Xiaoqing He, *Global dynamics of the two-species Lotka-Volterra competition-diffusion system*

Session 6B Cox 145
4:00PM – 4:30PM   Eric Avila-Vales, *Dynamics of an SIR epidemic model with nonlinear incidence rate, vertical transmission vaccination for the newborns and the capacity of treatment*
4:30PM – 5:00PM   Yuan Yuan, *Threshold dynamics in an SEIRS model with latency and temporary immunity*

Session 6C Cox 166
4:00PM – 4:30PM   Jon Jacobsen, *Integrodifference models for persistence in temporally varying river environments*
4:30PM – 5:00PM   Olga Vasilyeva, *Competition of multiple species in advective habitats*

5:15 Bus pick up at Cox for Marriott Dadeland

Banquet Bus Service:
Bus pick-up at the Marriott at 6:30 pm then Holiday Inn at 6:45 pm
Banquet 7:00 PM to 11:00PM
Bus pick-up at the Banquet at 11:15 pm, then Holiday Inn and finally the Marriott.

SUNDAY DECEMBER 21, 2014

07:45AM Bus pick up at Marriott Dadeland

08:00AM – 09:00AM Breakfast Cox Science Building Foyer
09:00AM – 10:00AM **Plenary Talk 5 Cox 126** (Chair: TBA)
William Fagan, Animal movement: Memory, learning, and autocorrelation

10:00AM – 10:30AM Break

Invited Talks
Session 7A Cox 126
10:30AM – 11:00AM Huaiping Zhu, *Bifurcation of limit cycles in predator-prey models, canard cycles and Hilbert`s 16th problem*
11:00PM – 11:30PM Rebecca C. Tyson, *How seasonally varying predation behaviour and climate shifts affect predator-prey cycles*
11:30PM – 12:00PM Yun Kang, *A two-patch prey-predator model with dispersal in predators driven by the strength of prey-predator interactions*

Session 7B Cox 145
10:30AM – 11:00AM Yanyu Xiao, *How do human activities impact the transmission of vector-borne diseases ?*
11:00AM – 11:30AM Fei Xu, *Spatial spread of an epidemic through public transportation systems with a hub*
11:30AM – 12:00PM Jing Chen, *Modeling the geographic spread of rabies in China*

Session 7C Cox 166
11:00AM – 11:30AM Salomé Martínez, *Integrable steady states for a nonlocal equation*
11:30AM – 12:00AM Tim Reluga, *Being discrete with invasions*
12:00AM – 12:30PM Louis Fan, *Stochastic spatial models for chemotaxis*

12:30PM – 1:30PM Lunch

1:45PM Bus pick up at Cox for Marriott Dadeland