STEPHEN D. PANKAVICH, PH.D

Department of Applied
Mathematics and Statistics
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RESEARCH INTERESTS

Applied Mathematics, Partial Differential Equations and Kinetic Theory, Multiscale Modeling and Simulation, Computational Virology and Bionanosystems, Nonlinear Wave Equations

EDUCATION

2005	Ph.D.	Mathematical Sciences, Carnegie Mellon University (CMU) (Advisor: Jack Schaeffer)
2001	M.S.	Mathematical Sciences, Carnegie Mellon University
2000	B.S.	Mathematical Sciences, Carnegie Mellon University with Mellon College of Science & University Research Honors

EMPLOYMENT

- **Assistant Professor**, August 2012 - present
  Department of Applied Mathematics and Statisics, Colorado School of Mines (CSM)

- **Assistant Professor**, August 2010 - present
  Department of Mathematics, United States Naval Academy (USNA)

- **Assistant Professor**, August 2008 - August 2010
  Department of Mathematics, University of Texas at Arlington (UTA)

- **Postdoctoral Research Scientist**, August 2007 - August 2008
  Center for Cell and Virus Theory, Indiana University

- **Zorn Postdoctoral Fellow**, August 2005 - June 2008
  Department of Mathematics, Indiana University (IU)

- **Open Learning Initiative Program Fellow**, August 2004 - August 2005
  The William and Flora Hewlett Foundation and Carnegie Mellon University:
  Developed curriculum for, designed, and created an interactive, online Differential and Integral Calculus course.

- **Adjunct Faculty**, January 2004 - August 2004
  The Pennsylvania State University, New Kensington and McKeesport Campuses

- **Peer Tutoring Coordinator**, August 2001 - August 2005
  Office of Academic Development, Carnegie Mellon University:
  Responsible for all activities within university-wide tutoring program, including hiring, scheduling, training, certification, and evaluation of tutors.

- **Graduate Researcher**, June 2000 - August 2000
  Computational Sciences Research Institute (CSRI), Sandia National Laboratories
  Advisors : Paul Boggs (Sandia), Anthony Kearsley (Carnegie Mellon/NIST)

LIST OF PUBLICATIONS

[1] "The effects of latent infection on the dynamics of HIV" *submitted to* Journal of Mathematical Biology.

[2] "Global Classical Solutions to the One and one-half dimensional relativistic Vlasov-Maxwell-Fokker-Planck system" (with N. Michalowski) *in revision*.

[3] "A One-dimensional Kinetic Model of Plasma Dynamics with a Hyperbolic Field " (with C. Nguyen and J. Anderson) *submitted to* SIAM Journal on Mathematical Analysis.

[4] "Instability of some Periodic BGK Waves for the Vlasov-Poisson system" (with R. Allen) *submitted to* Involve.

[5] "Hierarchical Multiscale Modeling of Macromolecules and their Assemblies" (with P. Ortoleva and A. Singharoy) Soft Matter **9**: 4319-4335 (2013).

[6] "Nonlinear Instability of steady states in Parabolic and Hyperbolic Diffusion" (with P. Radu) Evolution Equations and Control Theory **2**: 403-422 (2013).

[7] "Nanosystem Self-Assembly Pathways Discovered via All-Atom Multiscale Analysis" (with P. Ortoleva) Journal of Physical Chemistry B **116**: 8355–8362 (2012).

[8] "A Particle Method for a Collisionless Plasma with Infinite Mass" Mathematics and Computers in Simulation **82**: 1278-1286 (2012).

[9] "Computational Methods for a One-dimensional Plasma Model with Transport Field" (advisor/sponsor for D. Brewer) SIAM Journal on Undergraduate Research, **4**: 81-104 (2011).

[10] "Multiscaling for Systems with a Broad Continuum of Characteristic Lengths and Times: Structural Transitions in Nanocomposites" (with P. Ortoleva) Journal of Mathematical Physics **51**: 063303 (2010). *Also featured in Advances in Nanotechnology Research and Application (2011).

[11] "Large Time Behavior of the Relativistic Vlasov-Maxwell System in Low Space Dimension" (with J. Schaeffer and R. Glassey) Differential and Integral Equations **23**: 61–77 (2010).

[12] "Time Decay for Solutions to One-dimensional Equations of Plasma Dynamics" (with J. Schaeffer and R. Glassey) Quarterly of Applied Mathematics **68**: 135–141 (2010).

[13] "Liquid-crystal Transitions: A First-principles Multiscale Approach" (with Z.Shreif and P. Ortoleva) Physical Review E **80**: 031703 (2009).

[14] "On Long-time Behavior of Monocharged and Neutral Plasmas in One and one-half Dimensions" (with J. Schaeffer and R. Glassey) Kinetic & Related Models **2**: 465–488 (2009).

[15] "Self-Assembly of Nanocomponents into Composite Structures: Derivation and Simulation of Langevin Equations" (with Y. Miao, Z. Shreif, and P. Ortoleva) Journal of Chemical Physics **130**: 194115 (2009).
*Also featured in Virtual Journal of Nanoscale Science and Technology **19** (2009).

[16] "Multiscale Theory of Boson Droplets: Implications for Collective and Single-Particle Excitations" (with Z. Shreif, Y. Chen, and P. Ortoleva) Physical Review A **79**: 013628 (2009).

[17] "Decay in Time for a One-Dimensional, Two Component Plasma" (with J. Schaeffer and R. Glassey) Mathematical Methods in the Applied Sciences **31**: 2115–2132 (2008).

[18] "Stochastic Dynamics of Bionanosystems: Multiscale Analysis and Specialized Ensembles" (with J. Ortoleva, Y. Miao, Z. Shreif, and P. Ortoleva) Journal of Chemical Physics **128**: 234908 (2008).
*Also featured in Virtual Journal of Biological Physics Research **16** (2008) and Virtual Journal of Nanoscale Science and Technology **18** (2008).

[19] "Multiscaling in Classical Nanosystems: Derivation of Smoluchowski and Fokker-Planck Equations" (with Z. Shreif and P. Ortoleva) Physica A **387**: 4053–4069 (2008).

[20] "Explicit solutions of the One-Dimensional Vlasov-Poisson System with Infinite Mass" Mathematical Methods in the Applied Sciences **31**: 375-389 (2008).

[21] "Recent Trends in the Kinetic Theory of Plasma Physics", International Conference on Trends and Challenges in Applied Mathematics, Romania; Matrix Rom: 287-290 (2007).

[22] "Global Existence and Increased Spatial Decay for the Radial Vlasov-Poisson System with Steady Spatial Asymptotics" Transport Theory & Statistical Physics **36**: 531–562 (2007).

[23] "Local Existence for the One-Dimensional Vlasov-Poisson System with Infinite Mass" Mathematical Methods in the Applied Sciences **30**: 529–548 (2007).

[24] "Global Existence for the Three-Dimensional Vlasov-Poisson System with Steady Spatial Asymptotics" Communications in Partial Differential Equations **31**: 349-370 (2006).

[25] "The Vlasov-Poisson System with Infinite Mass and Energy", Ph.D. Thesis, Carnegie Mellon University (2005).

FELLOWSHIPS, GRANTS, AND AWARDS

1. *National Science Foundation Standard Research Grant* (PI), DMS 12-11667, 2012-2015; $99,997

2. *Naval Research Council Grant* (PI), NARC 65-09, 2011-2013; $59,254

3. *National Science Foundation Standard Research Grant* (PI), DMS 09-08413, 2009-2012; $159,569

4. *Nominee and Finalist*, Sixth Annual UTA Honors College Outstanding Faculty Award, 2010.

5. *Center for Undergraduate Research in Mathematics (CURM) Mini-grant* (PI), subcontracted under NSF Grant DMS 06-36648, 2009-2010; $19,850

6. *Research Enhancement Grant* (PI), UTA, 2009-2010; $10,000

7. *Travel / Professional Development Award*, Office of Provost & Vice President for Academic Affairs, UTA, 2009, 2010; $1,000

8. *Integrative Computational Sciences Grant* (PI), UTA, 2008-2009; $5,000

9. *National Institutes of Health, Center for Physics-Based Simulation of Biological Structures (SimBioS) Grant* (co-PI), subcontracted under NIH Grant U54 GM072970, 2007-2008; $50,000

10. *Travel Grants*: University of Wyoming (2013), Institute for Mathematics and its Applications (2013), Wolfgang Pauli Institute (2012), KI-Net (2012), Institute for Computational and Experimental Research in Mathematics (2011), Kinetic Theory FRG (2011), Institute for Mathematical Sciences at National University of Singapore (2010), Texas Christian University (2010), Isaac Newton Institute at Cambridge University, UK (2010), University of Nebraska, Lincoln (2009, 2010, 2011), Universidad de Granada, Spain (2009), Institute for Pure and Applied Mathematics (2009), Institute for Mathematics and its Applications (2008), Lefschetz Center for Dynamical Systems - Brown University (2008), Universität Bayreuth, Germany (2007), Indiana University (2007), École Polytechnique (2007), Carnegie Mellon University (2003, 2004, 2005)

11. *NSF VIGRE Graduate Fellowship*, National Science Foundation, 2000 - 2004

12. *Student Leadership Award*, Carnegie Mellon University, May 2000

13. *Andrew Carnegie Scholarship*, Carnegie Mellon University, 1997 - 2000

GRADUATE AND UNDERGRADUATE RESEARCH

- Colorado School of Mines
  1. Undergraduate Research Project: Eric Jones (2013-)
  "The effects of periodic efficacy in HIV antiretroviral therapy"

- United States Naval Academy
  1. Trident Scholar Project: Peter Roemer (2011-2013)
  "A study of the persistence of HIV in stochastic populations models"

  2. Senior Capstone Projects (2012)

     1. Peter Besser - "Options pricing with time-dependent interest rates"
     2. Britt Campbell - "Monte carlo methods for options pricing"
     3. Colleen Fallon - "Random walks and Brownian motion"
     4. Kevin Flood - "Exotic Options"
     5. Ross Hieatt - "The Black-Scholes options pricing model"
     6. Maxwell Klein - "Optimal stopping for the American option"
     7. Kelly Ranz - "Combination strategies used to minimize risk '
     8. Christopher Ricks - "Investing in a volatile market"
     9. Kameron Wright - "Credit default swaps"

- University of Texas at Arlington
  1. Numerous independent research projects with undergraduates during academic year

Student	Project	Honors/Publications	Year(s)
Charles Nguyen	*CURM program	B.S. Honors Thesis; Pub. [2]	2009-2010
Dustin Brewer	*CURM program	SIAM prize (2010); Pub. [7]	2009-2010
Robert Allen	*CURM program	Pub. [4]	2009-2010
Mihai Ionita	Honors Calculus		2009
Blake Arthur	Honors Calculus		2008
Adewumi Adegbenro	Honors Calculus		2008

*CURM Undergraduate Research Group Project - Magnetic Waves in One-dimensional Plasma: Well-posedness, Stability, Numerical Analysis, and Computation

2. Masters Thesis : Jennifer Anderson (2009-2010)
"Local Existence for the Vlasov Equation with a Transport Field" (see Publication [2])
Currently Ph.D candidate at Texas A&M University

- Indiana University
  Senior Research Project: Jamil Ortoleva (2007-2008), Mathematical Tools of Multiscale Analysis for Bionanosystems (see Publication [16])

- Carnegie Mellon University
  Teaching & Research Assistant within Center for Nonlinear Analysis (CNA) Summer REU (2001-2005): Assisted teams of undergraduate students on research projects in the Calculus of Variations, Mathematical Biology, and Mathematical Finance.

Student(s)	Project	Year
Carl Westine	"On the Pricing of Perpetual American Put Options"	2002
Derrick Dennis Liliana Martinez Dorian Smith	"Designing a roller coaster"	2004
Ruth Galaviz Alessa Kim Jillian Paulen	"Soap Films and Minimal Surfaces of Revolution"	2005
Amy Schollmeier Shelby Wilson	"Nim and its Variations"	2005
Mert Arslan	"Calculating Caps with Various Volatilities and a Brief Look at Forward Rates"	2005

INVITED LECTURES

- **2013:** *Colloquium, University of Wyoming (Sept.); Institute for Mathematics and its Applications (May); PDE Seminar, Trinity College, Dublin (Feb); AMS/MAA Joint Meetings, San Diego, CA (Jan);

- **2012:** Workshop on Relativistic Kinetic Theory, Wolfgang Pauli Institute, Vienna (Nov); KI-Net Conference on Kinetic Description of Social Dynamics (Nov); Colloquium, United States Naval Academy (Nov); KI-Net Young Researcher's Conference (Oct); Colloquium, Colorado School of Mines (April); Undergraduate Colloquium, Haverford College (Feb); Colloquium, California State University Channel Islands (Feb); Undergraduate Colloquium, Carleton College (Jan); Colloquium, Loyola University Chicago (Jan); PDE/Applied Mathematics Seminar, United States Naval Academy (Jan-Feb); AMS/MAA Joint Meetings, Boston, MA (Jan);

- **2011:** SIAM Conference on Analysis of PDE, San Diego, CA (Nov); AMS Fall Sectional Meeting, University of Utah (Oct); AMS Fall Sectional Meeting, University of Nebraska, Lincoln (Oct); PDE Seminar, University of Nebraska, Lincoln (Oct); Workshop on Vlasov Models in Kinetic Theory, ICERM (Sept); Undergraduate Seminar, USNA (Aug); AMS/MAA Joint Meetings, New Orleans, LA (Jan);

- **2010:** Basic Notions Seminar, USNA (Dec); Institute for Mathematical Sciences, National University of Singapore (Nov); Undergraduate Seminar, USNA, Topics in Mathematics (Nov/Dec); Frank Stones Research Lectureship, Texas Christian University (Oct); Isaac Newton Institute, Cambridge University, UK (Sep); MAA MathFest (with Undergraduate Research Group), Pittsburgh, PA (Aug); CURM Workshop (with Undergraduate Research Group), Provo, UT (March); Colloquium, Clemson University (March); Richard F. Barry Colloquium, Old Dominion University (Feb); Colloquium, United States Naval Academy (Feb); Colloquium, United States Air Force Institute of Technology (Feb); Colloquium, Santa Clara University (Feb); Colloquium, Fordham University (Feb); Colloquium, University of Central Florida (Feb); Colloquium, Miami (OH) University (Feb); Colloquium, College of Charleston (Jan); AMS/MAA Joint Meetings, San Francisco, CA (Jan);

- **2009:** SIAM Conference on Analysis of PDE, Miami, FL (Dec); Colloquium, University of Nebraska, Lincoln (Nov); PDE Seminar, Georgia Institute of Technology (Sep); Departamento de Matemàtica Aplicada, Universidad de Granada, Spain (July); Workshop on Quantum and Kinetic Transport, IPAM (April); PDE Seminar, North Carolina State University (March); IMACS Conference on Nonlinear Evolution Equations, University of Georgia (March);

- **2008:** Workshop on Multiscale Analysis and Computation (poster), IMA (Nov); DFW Research Day, UTA (Oct); SIAM Life Sciences 2008 (poster), Montreal, Canada (Aug); AMS Spring Sectional Meeting, Indiana University (April); Undergraduate Math Club, Indiana University (April); Colloquium, College of Staten Island (CUNY) (March); Colloquium, Fairfield University (March); Colloquium, Swarthmore College (Feb); Colloquium, Queen's College (CUNY) (Feb); Colloquium, University of Texas at Arlington (Feb); Colloquium, University of Missouri at St. Louis (Feb); Colloquium, Xavier University (Jan);

- **2007:** Center for Cell and Virus Theory Seminar, Indiana University (Dec); PDE Seminar, Mathematisches Institut, Universität Bayreuth, Germany (July); International Conference on Theoretical, Computational, and Applied Mathematics, Bucharest, Romania (June); PDE Seminar, Indiana University (April);

- **2006:** PDE Seminar, Indiana University (Oct);

- **2005:** Midwest PDE Seminar, University of Notre Dame (Dec); AMS Fall Sectional Meeting, University of Nebraska, Lincoln (Oct); PDE Seminar, Indiana University (Sep); PDE Seminar, CMU (April); Colloquium, Goucher College (Feb); Undergraduate Colloquium, CMU (Jan)

- **Prior to Ph.D**: Center for Nonlinear Analysis Summer REU Colloquium, CMU (July 2001-2005); NAM Mathfest XIV, Morehouse College (Oct 2004); Colloquium, CMU (Oct 2004); PDE Seminar, CMU (Mar 2004); PDE Seminar, CMU (Oct 2002); NAM Mathfest XI, Florida A&M University (Oct 2001); Optimization Group Seminar, Sandia National Laboratories (Aug 2000) Center for Nonlinear Analysis Undergraduate Research Seminar, CMU (July 1999)

PROFESSIONAL SERVICE & OUTREACH

- **Referee/Reviewer:** Journal of Differential Equations (3); Journal of Physical Chemistry B; Applicable Analysis (2); SIAM Undergraduate Research Online; AIP Advances (3); Mathematical Methods in the Applied Sciences (5); Kinetic and Related Models; SIAM Journal on Mathematical Analysis (2); Journal of Mathematical Analysis and Applications; PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies (6); AIMS Conference on Differential Equations & Dynamical Systems; *Applied Mathematics* textbook published by Wiley; *Stochastic Modeling and Theoretical Statistics* textbook published by Pearson; *Calculus* textbook published by Prentice-Hall; *Calculus* textbook published by Wiley; AMS Mathematical Reviews (30-35)

- **Organizer**

  1. SIAM Baltimore-Washington Fall 2012 Sectional Meeting
  2. SIAM Baltimore-Washington Summer 2012 Sectional Meeting
  3. SIAM Baltimore-Washington Spring 2012 Sectional Meeting
  4. SIAM Baltimore-Washington Fall 2011 Sectional Meeting
  5. Special Session on "Nonlinear Hyperbolic Equations: Theoretical Advances and Applications" at SIAM Conference on Analysis of Partial Differential Equations, November 2011

- **Panel/Proposal Reviewer**

  1. CSM Goldwater Fellowship Applications, 2012
  2. CSM Fulbright Fellowship Applications, 2012
  3. Center for Undergraduate Research in Mathematics (CURM), 2010
  4. Math in the City (MitC) Program, University of Nebraska-Lincoln, 2010
  5. Indiana University Department of Mathematics Panel on Entering the Academic Workforce, 2010

- **Departmental Representative/Organizer:**

  1. Co-founder and Organizer of CSM Problem Solving Seminar, Dept of Applied Mathematics and Statistics, CSM (2013-)
  2. Co-founder and Organizer of CSM Putnam Seminar, Dept of Applied Mathematics and Statistics, CSM (2012-)
  3. Colloquium Coordinator, Dept of Applied Mathematics and Statistics, CSM (2012-)
  4. Undergraduate Committee, Dept of Applied Mathematics and Statistics, CSM (2012-)
  5. Applied and Computational Mathematics Hiring Committee, Dept of Applied Mathematics and Statistics, CSM (2012-)
  6. MATH 307/407 Development Committee, Dept of Applied Mathematics and Statistics, CSM (2012-)
  7. Qualifying Examination Committees - Analysis, Applied Mathematics, Dept of Applied Mathematics and Statistics, CSM (2012-)
  8. Secretary, SIAM Washington-Baltimore Section (2011-)

9. Treasurer, SIAM Washington-Baltimore Section (2011-)

10. MD-DC-VA MAA Section NExT Fellow (2010-2012)

11. Organizer & Founder, PDE/Applied Mathematics Seminar (2011-2012)

12. Hiring Committee, Department of Mathematics, USNA (2010-2012)

13. Honors Committee, Department of Mathematics, USNA (2010-2012)

14. Majors Curriculum Committee, Department of Mathematics, USNA (2010-2012)

15. Majors Recruitment Committee, Department of Mathematics, USNA (2010-2012)

16. Multimedia Support Center Representative, USNA (2010-2012)

17. Combined Federal Campaign Keyperson, USNA (2010-2011)

18. Mathematical Association of America (MAA) Student Chapter Sponsor at UTA (2008-2010)

19. Advisory Committee, Department of Mathematics, UTA (2009-2010)

20. Mid-cities Math Circle Seminar Faculty (2009-2010)

21. UTA University Hearing Board (2009-2010)

22. Calculus Committee, Department of Mathematics, UTA (2009-2010)

23. UTA Graduate Student Preliminary Examination Writer, Proctor, Grader (2008-2010)

24. UTA Putnam Seminar Organizer (2008, 2009)

25. UTA Research and Creative Activity Group (2008-2010)

26. UTA Calculus Bowl Organizer (2008-2010)

27. UTA Teaching Circles Member (2008-2010)

28. GAANN Day - Department of Mathematics Representative (2008-2010)

29. UTA Preview Day - Department of Mathematics Representative (2008)

- **Committee Member/Advisor**

  1. Amanda Meier - Ph.D. Committee 2012 (advisor: Chip Durfee)

  2. Jennifer Anderson - Masters Defense, 2010 (chair & advisor)

  3. Charles Nguyen - Honors Thesis Defense, 2010 (advisor)

  4. Caixia (Ruby) Chen - Ph.D. Qualifying Examination, 2010 (chair: Yue Liu)

  5. Alicia Prieto Langarica - Ph.D. Qualifying Examination, 2010 (chair: Hristo Kojouharov)

  6. Stephen Salako - Ph.D. Defense, 2009 (chair: Goujun Liao)

- **Faculty Judge**

  1. Vanderhoof Elementary School Career Science Fair (2013)

  2. Annapolis Middle School Science Fair (2012)

  3. Undergraduate Research Poster Session, AMS/MAA Joint Meetings (2009-2013)

  4. UTA ACES Program, Graduate Student Presentations (2009, 2010)

  5. Indiana Women in Science Program (WISP) Research Conference (2007, 2008)

TEACHING EXPERIENCE

<u>Colorado School of Mines</u> (2012-)

- MATH 331: *Mathematical Biology*
- MATH 398: *Applied Numerical Methods*
- MATH 510 (Grad): *Ordinary Differential Equations and Dynamical Systems*

<u>United States Naval Academy</u> (2010-2012)

- SM121: *Calculus I*
- SM233: *Introduction to Applied Mathematics*
- SM316: *Engineering Mathematics with Probability and Statistics*
- SM473: *Senior Capstone - Introduction to Mathematical Finance*
- SM486: *Advanced Topics in Mathematics*
- SM592: *Trident Scholar Project*

<u>University of Texas at Arlington</u> (2008-2010)

- HONR-SC/MATH 1426: *Honors Calculus I*
- MATH 2425: *Calculus II*
- MATH 2326: *Calculus III*
- MATH 4191: *Putnam Seminar* (co-taught)
- MATH 4391: *Special Topics in Mathematics*
- MATH 4394: *Undergraduate Research Experiences*
- MATH 5350 (Grad): *Applied Mathematics I*

- MATH 5351 (Grad): *Applied Mathematics II*
- MATH 5395 (Grad): *Special Project in Mathematics Research*

<u>Indiana University</u> (2005 - 2008)

- M119: *Brief Survey of Calculus I*
- M211: *Calculus I*
- M212: *Calculus II*
- M365: *Introduction to Probability and Statistics*
- M441: *Partial Differential Equations with Applications I*
- M442: *Partial Differential Equations with Applications II*
- M472: *Numerical Analysis II*

<u>Carnegie Mellon University</u> (2001 - 2005)

- Math 21-118: *Differential and Integral Calculus*
- Math 21-120: *Calculus I for Economics Students*
- Math 21-259: *Calculus in 3D*

<u>Pennsylvania State University, New Kensington/McKeesport Campuses</u> (2004)

- Math 004: *Intermediate Algebra*
- Math 140: *Calculus I*

Teaching Assistant, Center for Nonlinear Analysis (CNA) Summer Institute, 2001-2005
Courses include: The Calculus of Variations, Convex Analysis, Computing with MAPLE, Introduction to Mathematical Finance.

Teaching Assistant, Carnegie Mellon University, August 1998 - May 2004
Courses include: Differential and Integral Calculus, Integration and Differential Equations, Calculus in 3D, Ordinary Differential Equations, Calculus I for Economics Students.

Teaching Assistant, Summer Academy for Minority Scholars, Summer 2004 (Pre-Calculus)

PROFESSIONAL MEMBERSHIPS

American Mathematical Society (AMS)
Society for Industrial and Applied Mathematics (SIAM)
Mathematical Association of America (MAA)
National Alliance for Doctoral Studies in the Mathematical Sciences - Undergraduate Mentor
National Alliance for Doctoral Studies in the Mathematical Sciences - Graduate Mentor
Pi Mu Epsilon (PME) - inducted 1998

REFERENCES

1.	Prof. Jack Schaeffer *(advisor)*	Carnegie Mellon University	*js5m@math.cmu.edu*
2.	Prof. Robert Glassey	Indiana University	*glassey@indiana.edu*
3.	Prof. Peter Ortoleva	Center for Cell & Virus Theory Indiana University	*ortoleva@indiana.edu*
4.	Prof. Charles Livingston *(teaching)*	Indiana University	*livingst@indiana.edu*