CURRICULUM VITAE
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Santiago Schnell
Professor of Biological Sciences
Professor of Applied & Computational Mathematics & Statistics

William K. Warren Foundation Dean of the College of Science

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Education

10/1991-12/1996	Licentiate in Biology, Universidad Simón Bolívar, Venezuela (Awarded: 24 Jan 1997). Dissertation: *Descripción Teórica de la Reacción en Cadena de la Polimerasa*. Advisor: Prof. Claudio Mendoza
10/1998-07/2002	Doctor of Philosophy (Mathematics), University of Oxford, UK (Awarded: 8 Nov 2003). Dissertation: *On the Quasi-Steady-State Approximation: Enzyme-substrate reactions as a case study.* Advisor: Prof. Philip K. Maini, FRS

Postdoctoral Training

10/2001-07/2004	Junior Research Fellow, Christ Church, University of Oxford, UK. Mentor: Prof. Philip K. Maini, FRS
08/2002-12/2002	Medical Research Council Postdoctoral Research Fellow, Department of Statistics, University of Oxford. Mentor: Prof. Jotun Hein
12/2002-07/2004	Ordinary Research Fellow of the Wellcome Trust, Centre for Mathematical Biology, Mathematical Institute, University of Oxford, UK, Mentors: Prof. Philip K. Maini, FRS and Prof. Claudio Stern, FRS

Administrative/Leadership Appointments, and Accomplishments

Indiana University, Bloomington, Indiana, USA

08/2004-05/2008 Associate Director, Biocomplexity Institute

- Led an initiative to revitalize the extramural funding of the institute through the submission of a national center grant.
- Recruited and hired two new faculty members between 2005 and 2007, increasing the size of the Biocomplexity core faculty by 20%.
- Organized and led fundraising for three international workshops (250 attendees per meeting)
- Established key components of the PhD in Informatics, especially in creating a complex systems track.

University of Michigan, Ann Arbor, Michigan, USA

06/2009-11/2021	Director, Summer Undergraduate Research Fellowship Program, Department of Molecular & Integrative Physiology, Medical School
07/2010-11/2021	Director, Interfacing Computation and Engineering with Digestive and Metabolic Physiology Program

- Co-organized the establishment of a summer fellowship program to attract undergraduate students to gain hands-on research experiences in the Department of Molecular & Integrative Physiology and other University of Michigan Medical School laboratories.
- Led the independent funding of a summer fellowship program through an NIDDK R25 grant "Interfacing Computation and Engineering with Digestive and Metabolic Physiology Program". This educational program served as a template to fund two additional R25 programs, effectively converting our summer fellowship program into an umbrella program. On average, our umbrella program attracts 75 students annually across the nation.
- Led the establishment of partnerships with minority serving institutions (University of Texas Rio Grande Valley, San Francisco State University, University of North Carolina Pembroke, Howard University) to attract students from diverse backgrounds to our summer programs and the University of Michigan graduate programs.

06/2012-11/2021 Associate Director, Systems and Integrative Biology Training Program, Medical School

- Led the revitalization of the program by creating a graduate course to introduce mathematical modeling to biomedical scientists and a hands-on workshop to introduce modeling principles to students and faculty.
- In collaboration with the Program Director, led the successful renewal of the training grant and expanded its scope to recruit students registered in different biomedical science programs at the university.
- Established a diversity, equity and inclusion strategy, which increased the diversity of our trainees from 5% to 23% within three years.

10/2013-11/2021 Director, In Silico Protein Analysis Module, Protein Folding Diseases Initiative

- Contributed to the establishment of the Protein Folding Disease Initiative, which has now become a new virtual research center at the University of Michigan.
- Led the establishment of a core research facility at the university (In Silico Protein Analysis Module), providing mathematical and computational modeling services for the biomedical science community.
- Contributed to the recruitment of two faculty members in the area of protein folding diseases, served the pilot research program committee to catalyze collaborations, and served as co-organizer for an annual protein folding disease symposium (300 participants).

10/2016-07/2017 Basic Science and Faculty Research Lead, Office for Health Equity and Inclusion, Medical School

- Led the development, coordination and implementation of the Strategic Plan for Diversity, Equity and Inclusion (DEI) of the 10 Basic Science Departments/Units at the University of Michigan Medical School: Biomedical Engineering, Biological Chemistry, Cell & Developmental Biology, Computational Medicine & Bioinformatics, Human Genetics, Learning Health Sciences, Microbiology & Immunology, Molecular & Behavioral Neuroscience, Molecular & Integrative Physiology and Pharmacology.
- Contributed to establishment of a pilot funding program to promote the creation of initiatives that increase diversity, equity and inclusion at Michigan Medicine.
- Oversaw and managed the research team responsible for evaluating DEI surveys and statistics in the medical school.
- Spearheaded the establishment of the University of Michigan Society for the Advancement of Chicanos/Latinos and Native Americans in Science (SACNAS) Chapter. Under my leadership, the Michigan SACNAS Chapter received two Chapter Awards. The Chapter also nominated two

university faculty members, who were successfully awarded the SACNAS Distinguished Scientist and Mentor Awards.

08/2017-02/2021 Interim Chair, Department of Molecular & Integrative Physiology, Medical School
03/2021-08/2021 Chair, Department of Molecular & Integrative Physiology, Medical School

- Led the largest basic science department with a budget in excess of $26 million dollars, $28 million in research support, 57,000 square feet of research space across 6 different buildings in the medical campus, and approximately 110 faculty members. Managed the day-day operations of the department with 13 staff members.
- Led the department to become and remain the top-NIH funded physiology department in the nation.
- Increased the total annual operating revenue from $20.7 to $26.9 million, total revenue in indirect costs and tuition from $3.4 to $4.7 million, and total cash and investments from $11.2 to $17.2 million.
- Successfully completed the fundraising campaign for two endowed collegiate professorships and established an endowment to support our department postdoctoral program activities. I increased the size of our endowment by 54% (from $5.4 to $8.3 million) in the last three years.
- Recruited one primary junior faculty, one lecturer, two new joint junior faculty, and appointed six joint intramural faculty, 15 research faculty, and seven adjunct faculty.
- Successfully put forth 10 primary faculty for promotion: five faculty on the instructional track and five faculty on the research track.
- Promoted faculty and students to the wider scientific community by nominating them for national and international awards. Among awards received, six members of our faculty were elected fellows of the American Association for the Advancement of Science and one of the Latin American Academy of Science.
- Successfully retained four faculty members with limited funding available through the department by obtaining resources from the school and university.
- Prepared a standard procedural manual to ensure optimum department operation and a consistent delivery of policies and services to our faculty, staff and trainees.
- Stewarded increase of the diversity of our trainees in our department educational programs, which now consist of nearly one third underrepresented minorities. In addition, I recruited one underrepresented minority to our faculty and diversified the office staff. The office staff is now 30% underrepresented minorities.
- Organized an internal self-study of the department, a department retreat, and stewarded the external review of the department.
- Launched initiatives to explore creating an online master's in physiology, teaching certificate in physiology, and a research master's program for medical students and physicians.

University of Notre Dame, Notre Dame, Indiana, USA

09/2021-present William K. Warren Foundation Dean of the College of Science

Administrative Leadership and Operations

- Lead the day-to-day operations of a college encompassing 5 departments, 6 centers, and 8 institutes, with more than 550 faculty, postdoctoral researchers, and staff, over 1,680 undergraduates, and 450 graduate students. Manage an annual budget exceeding $110 million, including $74 million in research support.
- Optimized the organizational structure of the Dean's Office, introducing strategic roles such as the Senior Director of Strategic Initiatives, enhancing efficiency and alignment with institutional goals. Implemented data-driven decision-making processes and operational reforms to strengthen governance, transparency, and communication.

- Established quarterly financial reviews across departments, centers, and institutes, resulting in improved resource allocation and operational efficiency.
- Prepared college standard operating procedures to ensure optimum college and its departments operation and a consistent delivery of policies and services to our faculty, staff, and trainees.

Advancement in Research and Education

Postdoctoral and Graduate Training

- Launched the elite Society of Science Fellows, attracting high-caliber postdoctoral talent from top institutions. Secured $6 million in donor funding to support postdoctoral training and professional development programs.
- Advocated for university-wide investments in postdoctoral fellowships, resulting in commitments for six fellowships each in the Colleges of Science, Engineering, and Arts & Letters.
- Enhanced graduate student stipends and recruitment processes, improving the competitiveness of graduate programs.

Bioengineering and Life Sciences Initiative (BELS)

- Co-launched this $150 million interdisciplinary program in collaboration with the College of Engineering, marking the largest philanthropic campaign in the university's history. Raised $23 million in initial support.
- Guided the development of governance structures and strategic priorities, establishing Notre Dame as a leader in biomedical research.
- In collaboration with the Vice President for Research, established the Berthiaume Institute for Precision Health with a gift of $20 million.

Rare Disease Leadership

- Launched a Patient Advocacy Education and Outreach Initiative with a $6 million dollar gift
- Directed a comprehensive rare disease strategy integrating research, education, and advocacy. Formalized partnerships with leading institutions, including the University of Pennsylvania and Oxford-Harrington Rare Disease Centre.
- Launched Platform X, a high-throughput drug screening platform, and facilitated leadership transitions within the Boler-Parseghian Center for Rare Disease.
- Planned the establishment of the Reisenauer Institute for Rare Diseases.

Public and External Engagement

Established high-impact public engagement initiatives

- Notre Dame Science Christmas Lecture, televised by the Public Broadcasting Corporation, garnering over 3.9K views on YouTube and 10.4 million views on Instagram in 2023 alone.
- Partnered with the South Bend International Airport to create Notre Dame's first permanent public science installation, reaching over one million travelers annually.
- Revitalized the Our Universe Revealed lecture series in collaboration with Indiana University South Bend and the St. Joseph County Public Library.
- Established a Professorship for the Public Understanding of Science. This position is among the first of its kind in the United States.

Strengthened international partnerships

- Forged a significant collaboration with Oxford's Doctoral Training Center, supported by prestigious BBSRC and NERC Landscape grants, enabling interdisciplinary PhD training.
- Expanded connections with the University of Cambridge and established a Director of Science and Engineering Partnerships based in London to promote European collaborations.

Fundraising and Infrastructure Development

- Raised over $140 million for the College of Science, supporting education, research priorities, and infrastructure projects.

- Spearheaded a $125 million fundraising effort for the expansion of the interdisciplinary science and engineering complex, including the construction of McCourtney Hall II (200,000 square feet).
- Conducted comprehensive space needs assessments, leading to plans for facility enhancements in Galvin Life Science Center and Nieuwland Halls.

Faculty and Program Development

- Recruited 68 faculty members, including 32 tenure-track or tenured faculty, and facilitated the hiring of two National Academy members.
- Oversaw the promotion of 68 faculty members across various tracks, ensuring consistent and equitable evaluations.
- Initiated the START Program to enhance onboarding and professional development for new faculty.
- Revamped procedures for collegiate professorships and center directorships, establishing clear expectations and goals.

Innovative Academic Programs

- Established the Rev. Joseph Carrier Medal, an international accolade recognizing excellence in science.
- Introduced groundbreaking minors in Science & Patient Advocacy and Scientific Computing, with the advocacy minor nearing the position of second-largest at Notre Dame.
- Collaborated on a university-wide vision for neuroscience, securing four tenure-track faculty lines and launching a successful cluster hire initiative.

Leadership in Academic Societies

07/2015-07/2017 President of the Society for Mathematical Biology

- Led the society by serving as chair of the board of directors, managing its budget, presiding over the annual meetings, stewarding its official publications, and running the society educational and awards program.
- Prepared a standard procedural manual to ensure optimum society operation and a consistent delivery of services. Also revamped the society grant programs to serve educational and outreach initiatives, as well as international programs.
- Doubled the annual operating budget from $750,000 to $1.5 million by doubling its membership from approximately 500 to 1,000, tripling the number of papers published by our official journal from 100 to 300 per year, and fundraising events.
- Recruited the new editor-in-chief for our official journal, The Bulletin of Mathematical Biology, and revamped the journal scope and editorial board to make our publication more attractive.
- Made major gains in fundraising for the Society, including donor visits and corporate and university events. Efforts resulted in a four-fold increase of the Society's endowment. This led to the establishment of awards to recognize excellence in mathematical biology at different career stages.
- Established the Society's subgroups program allowing members to meet and interact within more focused areas in smaller groups.

01/2018-08/2021 Council Member of the Association of Chairs for the Department of Physiology

- Representative of the association at the Council of Faculty and Academic Societies of the American Association of Medical Colleges. Under this role, I identify critical issues facing physiology departments in medical schools across the nation and serve as a voice for the physiology departments at the American Association of Medical Colleges.
- Help to reorganize national annual department surveys to collect data that assists chairs in benchmarking their department nationally while providing quantitative data that allows for resource bargaining within their respective institutions.

- Led an initiative to rank undergraduate and graduate educational programs in physiology and departments of physiology in the US News & World Ranking of Universities.
- Led an initiative to create a database of underrepresented minorities in the biomedical sciences to assist academic faculty identify physiologists for panels, symposium organizers and award committees who may diversify their talent pools.

Leadership in Academic Publishing

01/2019-01/2023 Editor-in-Chief of Mathematical Biosciences

- Increasing selectivity of the journal from a 28% paper acceptance rate in 2018 to an 8% acceptance rate in 2022.
- Increase the number of annual submissions from 545 to 876 papers per year.
- The above led the journal from an Impact Factor of 1.680 (2018) to 4.300 (2022).
- The CiteScore increased from 2.7 in 2018 to 7.5 in 2023.
- Improve decision times from 11.4 weeks from submission to first decision in 2018 (final decision 16.1 weeks) to 1 week from submission to first decision in 2022 (final decision to 2.5 weeks).
- The journal reached the top quartile in the categories of applied mathematics, probability & statistics, modeling & simulation, and general biological sciences. It became the premier mathematical and theoretical biology journal in terms of impact factor and selectivity.

Academic Appointments

***University of Oxford, Oxford, England, UK* (excluding postdoctoral appointments)**

10/2000-07/2001 *Retained Lecturer in Mathematics*, Pembroke College
10/2001-12/2001 *College Lecturer in Applied Mathematics*, Brasenose College

Indiana University, Bloomington, Indiana, USA

06/2004-07/2004 *Visiting Assistant Professorship of Informatics*, Luddy School of Informatics, Computing, and Engineering
08/2004-05/2008 *Assistant Professor of Informatics*, Luddy School of Informatics, Computing, and Engineering
01/2005-05/2008 *Adjunct Assistant Professor of Physics*, Department of Physics
08/2006-05/2008 *Affiliated Faculty, Latino Studies*

University of Michigan, Ann Arbor, Michigan, USA

05/2008-08/2015 *Associate Professor of Molecular & Integrative Physiology*, Department of Molecular & Integrative Physiology, University of Michigan Medical School
05/2008-08/2021 *Faculty,* Center for Computational Medicine & Biology
05/2008-08/2021 *William K. Brehm Investigator,* Michigan Comprehensive Diabetes Center
09/2008-08/2021 *Faculty,* Center for Cell Plasticity and Organ Design
01/2012-08/2021 *Faculty,* Cellular & Molecular Biology Program
11/2012-08/2021 *Faculty,* Center for Systems Biology
09/2013-08/2015 *Associate Professor of Computational Medicine & Biology*, Department of Computational Medicine & Bioinformatics, University of Michigan Medical School
09/2013-08/2021 *Faculty,* Center for Integrative Research in Critical Care
09/2015-08/2021 *Professor of Molecular & Integrative Physiology*, Department of Molecular & Integrative Physiology, University of Michigan Medical School
Professor of Computational Medicine & Bioinformatics, Department of Computational Medicine & Bioinformatics, University of Michigan Medical School
Faculty, Michigan Institute for Computational Discovery and Engineering

	Faculty, Michigan Institute for Data Science
06/2017-08/2021	*John A. Jacquez Collegiate Professor of Physiology*, Department of Molecular & Integrative Physiology, University of Michigan Medical School
01/2019-08/2021	*Faculty*, Precision Medicine
09/2021-present	*Adjunct Professor of Molecular & Integrative Physiology*, Department of Molecular & Integrative Physiology, University of Michigan Medical School

University of Notre Dame, Notre Dame, Indiana, USA

09/2021-present	Professor, Department of Biological Sciences Professor (concurrent), Department of Applied & Computational Mathematics & Statistics

Research Interests

I develop and apply rigorous mathematical, computational, and statistical models to solve complex problems in biomedicine, particularly in the areas of enzyme-catalyzed reactions, aberrant protein aggregation, and the molecular mechanisms of rare diseases. I am interested in creating standards-based approaches for measuring these phenomena and elucidating their molecular mechanisms under physiological conditions. I have also applied my mathematical and statistical approaches to explore research metrics and enhance academic performance of research universities.

My work in advancing measurement techniques directly enhances data integrity, enabling more reliable AI-driven insights in scientific discovery and biomedical applications. My goal is to advance biometrology by developing rigorous, reproducible, and robust measurement techniques that facilitate the translation of basic science and clinical research into biomedical breakthroughs.

For more information about current research, please visit: http://schnell-lab.nd.edu.

Grants

***Current support* (in order of awarded date)**

09/2020-07/2025, NIH/NINDS U54 NS 117170, "Epilepsy Multiplatform Variant Prediction (EpiMVP)", Principal Investigators: Lori Isom, Gemma Carvill, Michael Uhler, Margaret E. Ross, Jack Parent, and Yu Wang, Role: Co-Investigator (5% effort – 12-month appointment). Total funds (5 years): $11,935,759

08/2020-07/2025, NIH/NEI K08 EY 031757, "Glutamine as an alternative fuel source for photoreceptors". Principal Investigator: Thomas J. Wubben, MD, Role: Mentor (0% effort). Total funds (5 years): $1,163,035

07/2023-06/2026, NSF Graduate Research Fellowship Program, Fellow ID 2033359072. Principal Investigator: Isabella Gimon, Role: Mentor (0% effort). Total funds (3 years): $147,000

10/2024-09/2025, Dr. Scholl Foundation, "Global Science Engagement Initiative at the University of Notre Dame". Principal Investigators: Santiago Schnell (0% effort). Total funds (1 year): $350,000

Submitted

08/2025-08/2030, 100&Change Carrot & John D. and Catherine T. MacArthur Foundation, "RAE of Hope: Integrating Research-Advocacy-Education for the Rare Disease Community". Principal Investigator: Santiago Schnell. Total funds (5 years): $100,000,000.

Past Support **(in order of awarded date)**

12/2002-11/2005, The Wellcome Trust, London. Ordinary Research Fellowship, the Advanced Training Programme in Mathematical Biology (Grant No. 069155/Z/02/Z) "Models for pattern formation in somitogenesis: incorporating the effects of Fibroblast Growth Factor-8, Cell Adhesion Molecules and *Hox* genes". Principal Investigator: Santiago Schnell (100% effort) with the sponsorship of P. K. Maini and C. D. Stern. Total funds (3 years): GBP116,465

06/2005-04/2006, NIH/NIGMS R13 GM 75730, "Workshop: Biocomplexity VII - Unravelling the Function and Kinetics of Biochemical Networks" Principal Investigator: Santiago Schnell (9% effort – 12-month appointment). Total funds (1 year): $12,749

05/2005-04/2006, NSF MCB 0513693, "Workshop: Biocomplexity VII - Unravelling the Function and Kinetics of Biochemical Networks". Principal Investigator: Santiago Schnell (0% effort). Total funds (1 year): $15,000

05/2005-04/2006, Indiana University, Office of the Vice President for Research, Faculty Research Support Program "Modeling the Formation of Vertebral Precursors". Principal Investigator: Santiago Schnell (1 month summer effort). Total funds (1 year): $66,999

05/2006-04/2007, NSF Division of Integrative Organismal Biology, "Biocomplexity 9: Multiscale modeling of multicellular systems: An interdisciplinary workshop". Principal Investigator: Santiago Schnell (0% effort). Total funds (1 year): $10,000. Supplement to grant "Biocomplexity – Multiscale simulation of avian limb development", James Glazier (Principal Investigator)

07/2005-08/2009, NSF IIS 0513650, "SEI: NetWorkBench - A Large-Scale Network Analysis, Modeling, and Visualization Toolkit for Biomedical, Social Science and Physics Research". Principal Investigator: Katy Börner, Role: Co-Principal Investigator (1 month summer effort). Total funds (4 years): $1,120,924

08/2005-01/2010, NSF IIS 0513701 and 0852743, "SEI: Unraveling the structure and kinetics of biochemical pathways from time-series data". Principal Investigator: Santiago Schnell (2 summer months effort). Total funds (4 years): $473,541

09/2005-08/2012, NIH/NIGMS R01 GM 076692, "Multiscale Studies of Segmentation in Vertebrate Embryos". Principal Investigator: James A Glazier, Role: Co-Investigator (9% effort – 12-month appointment). Total funds (7 years): $3,560,762

03/2006-06/2006, Indiana University, Office of the Vice Chancellor for Academic Affairs and Dean of Faculties Multidisciplinary Ventures and Seminars Fund Application "Multiscale modeling of multicellular systems: An interdisciplinary workshop". Principal Investigator: Santiago Schnell (0% effort). Total funds (1 year): $5,000

05/2009-01/2010, NSF REU Supplement for Grant No. IIS-0852743, "SEI: Unraveling the structure and kinetics of biochemical pathways from time-series data". Principal Investigator: Santiago Schnell (0% effort). Total funds (1 year): $8,640

07/2010-01/2021, NIH/NIDDK R25 DK 088752, "Interfacing computation and engineering with digestive and metabolic physiology". Role: Principal Investigator/Program Director (10% effort – 12-month appointment). Total funds (10 years): $967,636.

09/2010-06/2020, NIH/NIDDK R01 DK 089933, "Morphogenesis of fetal intestinal epithelium". Principal Investigator: Deborah Gumucio, Role: Co-Investigator (5% effort – 12-month appointment). Total funds (10 years): $3,612,803

09/2010-08/2014, James S. McDonnell Foundation, Grant No. 220020223, "Identification of bistable network topologies associated with toxic aggregation thresholds found in conformational diseases". Role: Principal Investigator (35% effort – 12-month appointment). Total funds (4 years): $413,488

07/2010-06/2015, NIH/NIDDK R01 DK 053456, "Enhancement of Biomarkers for Type 1 Diabetes". Principal Investigator: Massimo Pietropaolo, Role: Co-Investigator (10% effort – 12-month appointment). Total funds (5 years): $2,485,812

03/2011-5/2012, NIH/NIGMS F31 GM 096728, "Defining reaction mechanisms of threshold phenomena in conformational diseases", Principal Investigator: Conner I. Sandefur, Role: Mentor (0% effort). Total funds (2 years): $47,164

02/2011-06/2011, Amgen Inc., Independent Medical Education Support MED#-24867, "Systems Biology Symposium". Principal Investigator: Santiago Schnell (0% effort). Total funds (1 year): $5,000

06/2011-05/2012, NSF DMS 1135663, "Travel Conference Grant Program for Transatlantic Joint Conference of the Society for Mathematical Biology and the European Society for Mathematical and Theoretical Biology". Role: Principal Investigator (0% effort). Total funds (1 year): $30,000

02/2011-12/2012, University of Michigan, Gilbert Whitaker Fund for the Improvement of Teaching, "Portable Physiology Computer Lab: Enhancing Student Learning of Physiology and Computational Modeling". Principal Investigator: Santiago Schnell (0% effort), Co-Principal Investigator: Elizabeth Rust. Total funds (2 years): $10,000

06/2011-12/2012, University of Michigan, Center for Computational Medicine & Bioinformatics Pilot Grants 2010. "Constructing regulatory networks that drive malignant metabolism and proliferation". Principal Investigator: Santiago Schnell (3.5% effort – 12-month appointment), Co-Principal Investigator: Sofia Merajver. Total funds (1 year): $50,000

07/2011-06/2021, NIH/NIGMS T32 GM 008322, "Systems and Integrative Biology Training Grant". Principal Investigator/Program Director: John Williams (until 5/2012), Malcolm Low (from 6/2012), Role: Associate Director (5% effort – 12-month appointment). Total funds (10 years): $2,631,198

08/2011-06/2016, NIH/ NHLBI, K23 HL 109149, "Mesenchymal stromal cell matricellular protein expression and bronchopulmonary dysplasia". Principal Investigator: Antonia Popova, Role: Co-Mentor (0% effort). Total funds (5 years): $712,814

09/2012-09/2014, NIH/NIDDK F30 DK 095517, "Notch Signaling Regulates Generation of Progenitors from Intestinal Stem Cells". Fellow: Alexis Carulli, Role: Co-Mentor (0% effort). Total funds (2 years): $75,900

09/2012-08/2018, NIH/NIDDK U24 DK 097153, "Michigan Regional Comprehensive Metabolomics Resource Core (MRC2)". Principal Investigator: Charles Burant, Role: Co-Investigator (5% effort – 12-month appointment). Total funds (5 years): $10,057,656

12/2012-06/2014, University of Michigan, MCubed Program, "Manipulating CXCL12-CXCR4 signaling pathway in breast cancer with an experimental and computational approach". Principal Investigator:

Jennifer Linderman. Co-Principal Investigator: Santiago Schnell (0% effort). Total funds (2 years): $50,000

01/2013-07/2015, James D. McDonnell Foundation, 2012 Postdoctoral Fellowship Award Program, "Using complex systems approaches to facilitate the discovery of next generation anti-cancer strategies". Principal Investigator: Michelle L. Wynn, Role: Mentor (0% effort). Total funds (2 years): $200,000

05/2013-09/2015, University of Michigan, Rackham Faculty Allies for Diversity in Graduate Education, "Enhancing diversity in physiology graduate education", Principal Investigator: Santiago Schnell (0% effort), Co-Principal Investigator: Jimo Borjigin. Total funds (2 years): $52,618

09/2013-08/2015, NIH/NIDKK DP3 DK 101083, "A Novel Approach Applying CFM Metrics to Identify a Prediabetic State". Principal Investigator: Massimo Pietropaolo, Role: Co-Investigator (5% effort – 12-month appointment). Total funds (2 years): $1,452,951

09/2013-08/2018, NIH/NIDD R01 DK 096972, "Notch Pathway Regulation of Intestinal Epithelial Cell Homeostasis". Principal Investigator: Linda Samuelson, Role: Co-investigator (5% effort – 12-month appointment). Total funds (5 years): $1,319,300

10/2013-09/2018, University of Michigan Medical School, FastForward to tomorrow's cure, "Center for Protein Folding Diseases". Principal Investigators: Henry L. Paulson and Andrew Lieberman, Role: Core Director (3% effort – 12-month appointment). Total funds (5 years): $9,345,598

09/2014-08/2024, NIH/NIDDK T32 DK 101357, "Multidisciplinary Training Program in Basic Diabetes Research". Principal Investigator/Program Director: Ernesto Bernal-Mizrachi (2014-2015), Ormond MacDougald (2015-2019), (from 2019) Ormond MacDougald and Peter Arvand, Role: Executive Committee Member (1% effort – 12-month appointment). Total funds (10 years): $3,002,111

01/2015-12/2015, University of Michigan Medical School, Becky Babcox Research Fund - Department of Neurology, "Experimental and computational dissection of α-synuclein fibrillation mechanism of inhibition". Principal Investigators: Magdalena Ivanova and Santiago Schnell (0% effort). Total funds (1 year): $30,000

06/2015-05/2017, University of Michigan Medical School, Discovery Fund, "The role of intrinsically disordered protein regions of the diabetes gene CLEC16A in pancreatic β-cell mitophagy". Principal Investigators: Scott A. Soleimanpour and Santiago Schnell (5% effort – 12-month appointment). Total funds (2 years): $185,478

07/2015-06/2018, NSF Graduate Research Fellowship Program, Fellow ID 2015196825, Principal Investigator: Maxwell DeNies, Role: Mentor (0% effort). Total funds (3 threes): $129,000

09/2015-09/2017, NIH/NICHD F30 HD 085721, "Integrating network and intrinsic changes in the GnRH neuron control of ovulation". Principal Investigator: Caroline Adams, Role: Co-Mentor (0% effort). Total funds (2 years): $75,447

04/2016-09/2016, NIH/NIDDK R56 DK 108921, "Mediators of mitophagy in the regulation of beta cell function". Principal Investigator: Scott A. Soleimanpour, Role: Co-Investigator (5% effort – 12-month appointment). Total funds (1 year): $116,250

07/2016-06/2021, Juvenile Diabetes Research Foundation 5-CDA-2016-189-A-N, "Targeting mitophagy to prevent beta cell failure in the pathogenesis of T1D (Career Development)". Principal Investigator:

Scott A. Soleimanpour, Role: Co-Investigator (5% effort – 12-month appointment). Total funds (5 years): $750,000

09/2016-08/2022, NIH/NIDDK R01 DK 108921, "Mediators of mitophagy in the regulation of beta cell function". Principal Investigator: Scott A. Soleimanpour, Role: Co-Investigator (5% effort – 12-month appointment). Total funds (5 years): $1,937,500

07/2017-06/2018, University of Michigan, Israel Partnership for Research and Education, "Gaining new insights into molecular mechanisms for the yeast Ire1 stress sensor activation using microfluidic pulsatile inputs and mathematical modeling". Principal Investigator: Santiago Schnell and Yonatan Savir (0% effort). Total funds (1 year): $50,000

04/2017-05/2022, NIH/NICHD R37 HD 034860, "Cellular and molecular bases for rhythmic GnRH release". Principal Investigator: Suzanne Moenter, Role: Co-Investigator (3% effort – 12-month appointment). Total funds (5 years): $2,568,066

12/2017-11/2020, NIH/NINDS R21 NS 101030 and R33 NS 101030, "Small molecule stabilizers of Hsp70 for treatment of spinal and bulbar muscular atrophy". Principal Investigator: Andrew Lieberman and Yoichi Osawa, Role: Co-Investigator (3% effort – 12-month appointment). Total funds (3 years): $1,158,757

04/2018-03/2020, NIH/NIDDK F31 DK 117610, "Defining the Sestrin2-AKT signaling pathway, a novel mechanism in the insulin signaling network". Principal Investigator: Allison Ho Kowalsky, Role: Mentor (0% effort). Total funds (2 years): $73,288

09/2018-08/2022, NIH/NICHD R01 HD 041469, "Central Actions of Estrogens: Effects on GnRH Neurons". Principal Investigator: Suzanne Moenter. Role: Co-Investigator (5% effort – 12-month appointment). Total funds (4 years): $ 2,305,967

02/2019-01/2021, NIH/NIGMS R01 GM 126028, "Mouse oocyte fate determination via polarized cytoplasmic transport within germline cysts". Principal Investigator: Lei Lei, Role: Collaborator (18% effort for postdoctoral fellow in lab – 12-month appointment). Total funds (3 years): $781,108

06/2020-05/2022, NIH/NIDDK F31 DK 122761, "Structure-function relationship of intrinsically disordered regions in diabetes-associated proteins". Principal Investigator: Morgan Gingerich, Role: Mentor (0% effort). Total funds (2 years): $84,756

09/2022-09/2023, Dr. Scholl Foundation, "Expansion of Research Capabilities in Neuroscience and Drug Discovery". Principal Investigator: Santiago Schnell (0% effort). Total funds (1 year): $500,000

10/2023-09/2024, Dr. Scholl Foundation, "Development of the Notre Dame Neuroscience Hub Through Dynamic In Vivo Imaging". Principal Investigators: Santiago Schnell (0% effort). Total funds (1 year): $350,000

Honors and Awards

Undergradute Student

01/1990-12/1996	IDEA Scholarship, Fundación IDEA, Instituto de Estudios Avanzados, Valle de Sartenejas, Venezuela
12/1996	Honorable Mention in Biology (for outstanding research thesis) Universidad Simón Bolívar, Valle de Sartenejas, Venezuela

Graduate Student

10/1998-07/2001	José Gregorio Hernández Award, Academia Nacional de Medicina de Venezuela and Pembroke College, Oxford, UK
10/1998-07/2001	ORS Award, Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom, London, UK
10/1998-07/2001	CONICIT Scholarship, Consejo Nacional de Investigaciones Científicas y Tecnológicas, Venezuela
10/1999-07/2001	Lord Miles Senior Scholar in Science, Pembroke College, Oxford, UK

Postdoctoral Training

10/2001-07/2005	Junior Research Fellow, Christ Church, University of Oxford, UK
12/2002-11/2005	Ordinary Fellow of the Wellcome Trust, Advanced Training Programme in Mathematical Biology, The Wellcome Trust, London, UK

Faculty and Professional

05/2006	Faculty Award for Teaching Excellence, Indiana University School of Informatics (Bloomington)
09/2010-08/2014	21st Century Scientist Scholar, James S. McDonnell Foundation, USA
11/2011	Fellow of the Royal Society of Chemistry, London, UK
01/2013	League of Educational Excellence (inaugural member), University of Michigan Medical School
10/2013	Endowment for Basic Science Teaching Award in Molecular & Integrative Physiology, University of Michigan Medical School
11/2013	Visiting Professor of Excellence, Department of Chemistry, University of Barcelona, Barcelona, Spain
11/2016	Fellow of the American Association for the Advancement of Science, Washington DC, USA
11/2016	Fellow of the Society for Mathematical Biology (inaugural class of 2017)
06/2017	John A. Jacquez Collegiate Professor of Physiology, University of Michigan Medical School
04/2018	Corresponding Fellow of the Academia de Ciencias de América Latina
04/2019	Emerging Leader in Health and Medicine (Forum), National Academy of Medicine
06/2022	Fellow of the Royal Society of Medicine, London, UK
07/2023	Fellow of the Royal Society of Biology, London, UK
07/2023	Arthur T. Winfree Prize, Society for Mathematical Biology
10/2023	SACNAS Distinguished Scientist Award
11/2023	Member of the American Academy of Sciences and Letters

Memberships in Academic Societies (current)

01/1996-present	Society for Mathematical Biology (SMB)	
	2008-2012	Member, Board of Directors
	2010	Member, Nomination Committee
	2011-2014	Member, Newsletter Editorial Board
	2012-2015	Chair, Finance Committee
	2014-2015	President-elect
	2015-2017	President
	2017-2018	Past-president
	2014-2018	Chair, Publications Committee
	2018-present	Chair, Finance Committee
	2018-present	Chair, Past-Presidents Advisory Board

01/1996-present	Society for Industrial and Applied Mathematics (SIAM)
01/1999-present	European Society for Mathematical and Theoretical Biology (ESMTB)
01/2008-present	The American Physiological Society (APS)
	2017-2021 Member, Association of Chairs of Dept. of Physiology
	2018-2021 Council Member
	2018-2021 Representative to Council of Faculty and Academic Societies, Association of American Medical Colleges
01/2008-present	Society for the Advancement of Chicanos/Latinos and Native Americans in Science (SACNAS), *Life member*
	2015 Faculty founder, University of Michigan SACNAS Chapter
	2015-2021 Faculty mentor for SACNAS Chapter
	- Best Chapter Award (2016)
	- Outstanding Recruitment/Membership Award (2017)
01/2009-present	The Biophysical Society (BS)
	2012-2019 Member, Minority Affairs Committee
	- Founder of Alliance of Scientific Societies (2015)[1]
10/2011-present	Royal Society of Chemistry (RSC)
09/2011-present	American Society for Cell Biology (ASCB)
12/2012-present	American Society for Biochemistry and Molecular Biology (ASBMB)
12/2012-present	American Association for the Advancement of Science (AAAS)
	2022-20024 Secretary, Section A
01/2014-present	American Chemical Society (ACS)
04/2018-present	Academia de Ciencias de América Latina (ACAL)
01/2022-present	American Mathematical Society (AMS)
06/2022-present	Royal Society of Medicine (RSM)
01/2023-present	Academic Freedom Alliance (AFA)
03/2023-present	American Academy of Sciences & Letters
	2023 Founding member
	2023-present Board of Trustees
06/2023-present	Royal Society of Biology (RSB)

Editorial positions, editorial advisory boards and peer-review service

Editorial positions

11/2002-09/2004	Guest Editor, *Progress in Biophysics and Molecular Biology* Special focused issue on "New approaches to modelling and analysis of biochemical reactions, pathways and networks" (Volume 86, Number 1), with E J Crampin
01/2005-07/2006	Associate Editor, *IEE Proceedings in Systems Biology* Special focused issue on "Unravelling the function and kinetics of biochemical networks: From experiments to systems biology"
10/2006-12/2007	Guest Editor, *Current Topics in Developmental Biology* Volume focused on "Multiscale Modeling of Multicellular Systems" (Volume 81)
10/2016-present	Guest Editor, *PLoS Computational Biology*
01/2019-01/2023	Editor-in-Chief, *Mathematical Biosciences*

Editorial Boards

01/2006-12/2014	Editorial Board, *Computational Biology & Chemistry*

[1] In 2017, this program was funded by an NSF/MCB Eager Grant: MCB-1744098 entitled "Alliance of Scientific Societies for the Development of the Next Generation of Scientists" (PI: Marina Ramirez-Alvarado)

08/2006-07/2014	Editorial Board, *IET Systems Biology*
04/2009-01/2023	Editorial Board, *Mathematical Biosciences*
01/2010-12/2010	Editorial Board, *Computational & Mathematical Methods in Medicine*
09/2012-present	Editorial Board, *Biomath*
01/2016-present	Editorial Board, *Current Opinion in Systems Biology*
02/2016-present	Editorial Board, *Cancer Research*
10/2016-present	Editorial Board, *Biophysical Chemistry*
02/2019-present	Editorial Board, *Journal of Theoretical Biology*
05/2023-present	Editorial Board, *Scientific Data*

Editorial Advisory Boards

07/2019-present	Advisory Board, *Biomolecular Concepts*
07/2023-present	Advisory Board, *Mathematical Biosciences*

Grant review panels, study sections and site visits

2006-present Member, NSF Grant Panel Review Committee

2006-2009	Information & Intelligent Systems
2008-2009	Postdoctoral Research Fellowships in Biological Informatics
2010	Faculty Early Career Development (CAREER) Program
2015-2016	Postdoctoral Research Fellowships in Biological Informatics

National Science Foundation, Washington DC

2008 Site Visit Committee Member, SFI CSET in Systems Biology
Science Foundation of Ireland

2010-2021 Modeling & Analysis of Biological System (MABS) Study Section
Center for Scientific Review, National Institutes of Health
ad hoc Member (10/2010; 09/2011; 02/2012; 06/2012; 02/2020)
07/2012-06/2016 Permanent Member, Alternate Chair

2015-2017 National Cancer Institute (NCI), National Institutes of Health
Cancer Systems Biology Consortium (CSBC)

2017 National Institutes of Health, Biomedical Technology Research Resource, Site Visit and Special Emphasis Panel/Scientific Review Group 2017/01 ZRG1 BST-X (40) P meeting

Peer-review service

Journals ACS Catalysis; Acta Biotheoretica; American Journal of Physiology – Endocrinology and Metabolism; American Journal of Physiology – Gastrointestinal and Liber Physiology; Ain Shams Engineering Journal; Applied Bioinformatics; Archives of Biochemistry and Biophysics; Artificial Life; Beilstein Journal of Organic Chemistry; Biochemical Society Transactions; Biochimia and Biophysica Acta – General Subjects; Biochimia and Biophysica Acta – Reviews on Cancer; Biochemical Journal; Biochimie; Bioinformatics; Biofilms; Biomolecular Concepts; Biophysical Journal; Biophysical Chemistry; Biotechniques; Biotechnology and Bioengineering; Biotechnology Journal; British Journal of Clinical Pharmacology; BMC Bioinformatics; BMC Systems Biology; Bulletin of Mathematical Biology; Cancer Research; Ciencia; Chemical Reviews; Chemical Communications; Chemical Physics; Comptes Rendus Biologies; Computational & Structural Biotechnology Journal; Computational Biology & Chemistry; Computers in Biology and Medicine; Developmental Biology; Electrophoresis; Environmental Microbiology; European Journal of

	Organic Chemistry; F1000 Research; FEBS Journal; FEBS Letter; FEBS Open Bio; Frontiers in Genetics (section Genomic Endocrinology); Frontiers in Physiology (section Systems Biology); IEE Proceedings Systems Biology; IEE Transactions on Biomedical Engineering; IET Systems Biology; Immunology and Cell Biology; Integrative Biology; International Journal of Chemical Kinetics; International Journal of Developmental Biology; Journal of Biological Physics; Journal of Chemical Physics; Journal of Chemometrics; Journal of Computational Biology; Journal of Enzyme Inhibition and Medicinal Chemistry; Journal of Mathematical Biology; Journal of Mathematical Chemistry; Journal of Molecular Graphics & Modelling; Journal of Physical Chemistry; Journal of the Science of Food and Agriculture; Journal of Theoretical Biology; Journal of the Royal Society Interface; Mathematical Biosciences; Mathematical Medicine and Biology: A Journal of the IMA; Mathematical Methods in the Applied Sciences; Mechanisms of Development; Molecular BioSystems; Molecular and Cellular Biology; Nonlinearity; Nature; Nature Communications; Naturwissenschaften; Open Biology; Pacific Symposium of Biocomputing; Philosophical Transactions of the Royal Society B: Biological Sciences; Physica A; Physical Letters A, Physical Chemistry Chemical Physics; PLoS Biology; PLoS Computational Biology; PLoS ONE; Proceeding of the Royal Society (London): Series A; Proceeding of the National Academy of Sciences of the United States of America; Proteomics, RSC Advances, Scientific Reports, SIAM Journal of Applied Mathematics; Trends in Biochemical Sciences.
Book projects	Cambridge University Press; Elsevier Science; Family Publications; Garland Science; Oxford University Press, Springer-Verlag
Grant proposals	Agence Nationale de la Recherche (ANR); Banff International Research Station (BIRS); Canadian Institutes of Health Research (CIHR); Center for Scientific Review, National Institutes of Health (NIH, USA); Engineering and Physical Science Council (EPSRC – UK); French National Cancer Institute (INCa, France); Human Frontier Science Program (HFSP); National Science Foundation (USA); Keck Foundation (USA); Netherlands Organisation for Scientific Research – DWO, The Dutch Research Council (Utrecht, Netherlands); Royal Society of New Zealand; Science Foundation of Ireland (Dublin, Ireland); Swiss National Science Foundation; US Army Medical Research and Materiel Command (USAMRMC); Wellcome Trust (London, UK).
Tenure & Promotion	Canada Research Chairs Program, College of William and Mary (USA), ETH Zurich (Switzerland), Kansas State University (USA), Korea Advanced Institute of Science & Technology (South Korea), Moffitt Cancer Center (USA), National Institute of Diabetes, Digestive, and Kidney Diseases (USA), National Institutes of Health/National Heart, Lung and Blood Institute (USA), Stellenbosch University (South Africa), Ohio State University (USA), Purdue University (USA), University of Baltimore (Baltimore County and College Pak, USA), University of California (Irvine, USA), University of Cambridge (UK), University of Edinburgh (UK), University of Gothenburg (Sweden), University of Nebraska-Lincoln (USA), University of Pittsburgh (USA), University of Pretoria (South Africa), University of South Florida (USA), University of New South Wales (Australia), University of Oxford (UK), University of Texas at El Paso (USA), University of Toronto (Canada), University of Warwick (UK), University of Waterloo (Canada), Virginia Polytechnic Institute and State University (USA), Vrije Universiteit (Netherlands).

Teaching and Mentoring

1. Students, postdoctoral fellows, research associates and faculty

University of Oxford

Undergraduate

2002 Wilhelm A. Steinmetz (Mathematics, Pembroke College). Project: Fractal enzyme kinetics (joint supervision with J. Hein). *2009 Doctor in Mathematics, Université Paris Sud -Paris* XI. *Currently Professor at Universidade Federal de Minas Gerais, Brazil*.

Master

10/2002-07/2003 Thomas E. Turner (M Res in Applied Mathematics). Dissertation: Stochastic and deterministic approaches to modelling *in vivo* biochemical kinetics. *Currently Head of Machine Learning - Financial Crime at Monzo Bank*.

Doctorate

10/2002-07/2005 Ruth E. Baker (D Phil in Mathematical Biology), Dissertation: Periodic pattern formation in developmental biology: A study of the mechanisms underlying somitogenesis (joint supervision with P. K. Maini). *Currently Professor of Mathematical Biology, University of Oxford*.

10/2005-12/2008 Edward H. Flach (D Phil in Mathematical Biology). Dissertation: Reactions in open systems: pattern formation with convection, and open biochemical pathways (joint supervision with J. Norbury). *Currently Technical Manager, Scientists Inc*.

Indiana University

Undergraduate

2006 - 2007 Sonya M. Hanson (Biophysics, University of Southern California). Projects: A test for measuring the effects of enzyme inactivation (2006), and the reactant stationary approximation in enzyme kinetics (2007). *2013 Doctor in Biophysics/Biochemistry, University of Oxford. Currently Faculty, Flatiron Institute*.

Master

08/2004-07/2006 James Thurmond (Master in Bioinformatics). Dissertation: BioFitWeb: A comprehensive on-line resource for enzyme kinetics researchers. *Currently Research Associate, Fly Base, Department of Biology, Indiana University, Bloomington, Indiana*.

08/2005-07/2006 Sourav Roy (Master in Bioinformatics). Dissertation: Prediction of structural and functional properties of the Notch-Delta pathway during somitogenesis. *2011 Currently Assistant Professor of Computational Biology, University of Texas, El Paso*.

08/2007-05/2008 Michelle L. Wynn (Master in Bioinformatics). Dissertation: Modelling neural ganglia cell chain migration. *Currently Software Engineer at Google X*.

Doctorate

08/2006-04/2011 Márcio Duarte Albasini Mourão (PhD in Complex Systems), Dissertation: Reverse engineering the mechanisms and the dynamical behavior of complex biochemical pathways. *Currently Data Scientist, Amway*.

Postdoctoral Fellows

05/2005-09/2006 Ramon Grima. *Currently Professor in Biology, University of Edinburgh*)

08/2005-07/2007	Santo Fortunato (in co-supervision with Alessandro Vespignani). *Currently Professor of Informatics at the Indiana University School of Informatics, Computing and Engineering*.
11/2005-05/2008	J. Srividhya. *Consultant R&D Scientist and Biosafety Specialist at Balt*.
08/2007-05/2008	Duygu Balcan (in co-supervision with Alessandro Vespignani). Passed away in 2013 holding an *Assistant Professorship of Physical Engineering at the Istanbul Technical University, Maslak, Turkey*.

University of Michigan

Undergraduate

2009-2010	Yue Ding (Biochemistry, University of Michigan). Molecular & Integrative Physiology Summer Research Fellow. *Currently MD, Assistant Professor of Medicine (Rheumatology), University of Toledo.*
2010-2011	Samantha M. Thomas (Interdisciplinary Physics, University of Michigan). Molecular & Integrative Physiology Summer Research Fellow. *2019 MD/PhD from the University of Chicago. Currently Resident at the University of Chicago.*
2011-2013	Nikita Consul (Chemical Engineering, Massachusetts Institute of Technology). Molecular & Integrative Physiology Summer Research Fellow. *Currently Clinical Assistant Professor, Division of Abdominal Radiology, University of Michigan Medical School.*
2011-2014	Doree R. Kreitman (Mathematics, University of Michigan), Undergraduate Research Opportunity Program Fellow. *Currently Actuarial Analyst, Allstate.*
2011-2014	Megan Egbert (Chemical Engineering, University of Michigan), Undergraduate Research Opportunity Program Fellow. *Currently Computational Scientists, Isomorphic Labs, London,*
2012	Paul Ponmattam (Mathematics, Vanderbilt University). Molecular & Integrative Physiology Summer Research Fellow. *Currently Broker, Old Mission Capital.*
2012	Eric Yu (Computer Science and Chemistry, Calvin College), Molecular & Integrative Physiology Summer Research Fellow. *Currently Resident Physician in anesthesiology at University of Colorado Anschutz Medical Center*.
2013-2017	Samuel Christensen (Mathematics, University of Michigan), Undergraduate Research Opportunity Program Fellow. *Currently PhD student in the University of California Los Angeles*.
2013-2015	Joe Hakim (Bioengineering, John Hopkins University). Molecular & Integrative Physiology Summer Research Fellow. *Currently MIT PhD in Biomedical Engineering and co-Founder of Ketryz*.
2015-2016	Alexis Grebenok (Mathematics, Canisius College). Molecular & Integrative Physiology Summer Research Fellow. *Completed Masters in Data Analytics at Canisius College. Currently Vice President of Reference Data Management at Citibank*.
2015	Harnel Alezi (Biomedical Engineering, Georgia Tech). Molecular & Integrative Physiology Summer Research Fellow.
2017	Zenny Chu (Biomedical Engineering, Johns Hopkins University). Molecular & Integrative Physiology Summer Research Fellow. *Obtained MS in Biomedical Engineering at Johns Hopkins University. Currently Senior Research Associate at Bristol Myers Squibb.*
2018	Aleesa Monaco (Biochemistry and Mathematics, Arizona State University). Molecular & Integrative Physiology Summer Research Fellow. *Currently Business Operations Manager, Wargames Delivered.*

2019	Sofia Medina (Mathematics, Florida State University). Molecular & Integrative Physiology Summer Research Fellow. *Currently Research Associate at the University of Michigan*.
2019	Joseph Cavataio (Biomedical Engineering, University of Michigan) Molecular & Integrative Physiology Summer Research Fellow. *Currently MD student at Wayne State University.*

Master

2011-2012	Firas Midani (Biomedical Engineering, University of Michigan). *2018 PhD in Computational Biology and Bioinformatics, Duke University. Currently Postdoctoral Fellow at Baylor College of Medicine*
2013-2014	Allison Ho Kowalsky (Molecular & Integrative Physiology, University of Michigan). 2020 *Currently Field Application Scientist, Thermo Fisher Scientific*
2013-2015	Michael Vincent (Molecular, Cellular, and Developmental Biology, University of Michigan). *Currently Core Bioinformatics Scientist, Van Andel Institute*.

Doctorate

06/2008-06/2012	Conner I. Sandefur (PhD in Bioinformatics). Dissertation: Defining chemical reaction mechanisms associated with threshold phenomena in conformation diseases. *Currently Scientist, SimulationsPlus*.
01/2011-11/2012	Yan Zhang (PhD in Bioinformatics). Dissertation: Network Discovery in Equilibrium-state and Dynamic Data: Applications to Phosphoproteomics and Kinetics (co-mentored with Philip Andrews). *Currently Scientific Reviewer U.S. Food and Drug Administration*.
06/2008-01/2013	Michelle L. Wynn (PhD in Bioinformatics). Dissertation: Unraveling the complex regulatory relationships between metabolism and signal transduction in breast cancer (joint supervisor with Sofia Merajver). *Currently Software Engineer at Google X.*
04/2009-11/2012	Erin Shellman (PhD in Bioinformatics). Dissertation: Network Motifs Provide Signatures that Characterize Metabolism (joint supervisor with Charles Burant). *Currently Technical Leader and Data Scientist at Ginkgo Bioworks, Inc*..
08/2011-07/2014	Alexis Carulli (MD/PhD in Molecular & Integrative Physiology). Dissertation: The Dynamic Regulation of Intestinal Stem Cells by Notch Signaling (co-mentored with Linda Samuelson). *Currently Assistant Professor of Hospital Medicine at University of Colorado*.
06/2012-05/2015	Daniel DeWoskin (PhD in Mathematics). Dissertation: Multiscale Modeling of Coupled Oscillators with Applications to the Mammalian Circadian Clock (co-mentored with Daniel Forger). *Currently Quantitative Research Analyst at Graham Capital Management*.
05/2013-04/2018	Caroline Adams (MD/PhD in Molecular & Integrative Physiology). Dissertation: Integrating network and intrinsic changes in GnRH neuron control of ovulation (co-mentor with Suzanne Moenter). *Currently Radiology Resident at University of Pennsylvania.*
09/2014-03/2020	Allison Ho Kowalsky (PhD in Molecular & Integrative Physiology). Dissertation: Defining and characterizing cell signal transduction in the Sestrin2 pathway (co-mentor with Jun Hee Lee). *Currently Field Application Scientists at Thermo Fisher Scientific*.
01/2015-06/2020	Maxwell DeNies (PhD in Cellular & Molecular Biology). Dissertation: Investigation of how receptor localization and endocytosis regulate CXCR4 signaling and post-translational modification (co-mentor with Allen Liu). *Currently Associate at RA Capital Management*.

01/2021-present	Kashvi Srivastava (PhD in Applied and Interdisciplinary Mathematics and Scientific Computing)

Postdoctoral Fellows

10/2008-12/2010	Miguel Rodriguez Marquez. *Currently Professor Departamento de Ciencias Naturales y Exactas, Corporación Universidad de la Costa Colombia*.
07/2011-07/2013	Márcio Duarte Albasini Mourão. *Currently Data Scientist, Amway*.
01/2013-04/2016	Michelle L. Wynn (co-mentored with Sofia D. Merajver). Currently *Software Engineer at Google X*.
08/2013-07/2015	Mark Whidden. *Currently Data Scientist, Teiko.bio.*
01/2016-06/2020	T. Wylie Stroberg. *Currently Assistant Professor of Mechanical Engineering, University of Alberta*.
07/2017-08/2021	Justin Eilertsen. *Currently Senior Editors in Mathematical Reviews, American Mathematical Society*.

Research Associates/Technicians

06/2012-05/2013	Firas Midani. *2018 PhD in Computational Biology and Bioinformatics, Duke University. Currently Postdoctoral Fellow at Baylor College of Medicine*
05/2013-present	Mariana Rodriguez Ortiz
05/2015-07/2016	Michael Vincent. *Currently Core Bioinformatics Scientist, Van Andel Institute*
06/2015-06/2017	Suzanne Shoffner. *Currently MSTP student at the University of Michigan*
06/2018-06/2020	Malgorzata Tyczynska. *Currently PhD student at the Integrated Mathematical Oncology Program at Moffitt Institute*.
06/2020-07/2021	Joseph Cavataio, *Currently MD student at Wayne State University*
07/2020-08/2021	Sofia Medina, *Currently DPhil student at the University of Oxford*

Intramural mentoring of faculty

05/2008-08/2012	Patrick Nelson, Research Assistant Professor. Department of Computational Medicine and Bioinformatics. (Currently *Department Chair and Professor of Mathematics and Computer Science, Lawrence Technical University, Southfield, Michigan*)
03/2011-06/2016	Antonia Popova (co-mentor with Marc Hershenson). Assistant Professor of Pediatrics Pulmonary Medicine.
09/2014-08/2021	Peter Freddolino, Assistant Professor of Biological Chemistry.

Extramural mentoring of faculty

05/2016-07/2021	Daniel Lobo, Assistant Professor of Biological Sciences, University of Maryland Baltimore County. Sponsored through University of Maryland Eminent Scholar Mentoring Program.
09/2017-present	Tatiana Marquez Lago, Associate Professor of Genetics, Associate Professor of Cell, Developmental and Integrative Biology, University of Alabama at Birmingham School of Medicine

University of Notre Dame

Undergraduate

2022-	Nadim Khouzam (Neuroscience, University of Notre Dame)
2024-	Romy Peterson (Neuroscience, University of Notre Dame)

Doctorate

01/2022-	Isabella Gimon (PhD in Integrated Biomedical Sciences)
11/2022-	Heather Foucault-Camm (PhD in Theology, Primary mentor: Gerald McKenny)

10/2023-	Kayoung Kim (PhD in History and Philosophy of Science, Primary mentor: Don Howard)

2. Doctoral dissertation and research committees

07/2004	Frido Erler (Dr. rer. nat. in Mathematics), "Spatiotemporal calcium-dynamics in presynaptic terminals", Faculty of Mathematics and Natural Sciences of Dresden University of Technology, Dresden, Germany (**External Examiner**)
07/2005	Cheng Cui (PhD in Biophysics), "Dynamics of cell movement and tissue motion in gastrulation and micromass cell culture", Department of Physics, Indiana University, Bloomington, USA (**Committee Member**)
08/2007	Ying Zhang (PhD in Biophysics), "Multiscale Simulation of Avian Limb Development", Department of Physics, Indiana University, Bloomington, USA (**Committee Member**)
11/2008	Dan V. Nicolau, Jr. (D. Phil. Oxon), "Spatial modelling of chemotaxis and its evolution", Mathematical Institute and Balliol College, University of Oxford, Oxford, UK (**External Examiner**)
07/2009-04/2011	Márcio Mourão (PhD in Informatics), "Unraveling the mechanisms and the dynamical behavior of complex biochemical pathways", Indiana University School of Informatics and Computing, Bloomington, Indiana, USA (**Chair**)
01/2010-11/2012	Erin Shelman (PhD in Bioinformatics), "Network motifs provide signatures that characterize metabolism", University of Michigan Medical School, Ann Arbor, Michigan, USA (**co-Chair**)
06/2010-05/2012	Conner Sandefur (PhD in Bioinformatics), "Defining chemical reaction mechanisms associated with threshold phenomena in conformational diseases", University of Michigan Medical School, Ann Arbor, Michigan, USA (**Chair**)
06/2010-01/2013	Michelle Wynn (PhD in Bioinformatics), "Unraveling the complex regulatory relationships between metabolism and signal transduction in breast cancer", University of Michigan Medical School, Ann Arbor, Michigan, USA (**co-Chair**)
10/2010-11/2012	Yan Zhang (PhD in Bioinformatics), "Network discovery in equilibrium-state and dynamic data: Applications to phosphoproteomics and kinetics", University of Michigan Medical School, Ann Arbor, Michigan, USA (**Committee Member**)
11/2010-01/2013	Chunchao Zhang (PhD in Bioinformatics), "Analysis of post-translational modification of histone proteins: cross-talk and beyond", University of Michigan Medical School, Ann Arbor, Michigan, USA (**Committee Member**)
11/2010	Terry Tang (PhD in Theoretical and Computational Science), "Mathematical modeling of eukaryitic gene expression", University of Lethbridge, Alberta, Canada (**External Examiner**)
01/2011-06/2014	Ryan O'Connell (PhD in Molecular & Integrative Physiology), "Mechanisms of excitation and remodeling of the cardiac action potential in two model systems", University of Michigan Medical School, Ann Arbor, Michigan, USA (**Committee Member**)
08/2011-06/2013	Alexis Carulli (MSTP program, PhD in Molecular & Integrative Physiology under the Medical Scientist Training Program), "The Dynamic Regulation of Intestinal Stem Cells by Notch Signaling", University of Michigan Medical School, Ann Arbor, Michigan, USA (**Committee Member**)
02/2012	Tanya Salyers (PhD in Applied and Computational Mathematics), "Modeling how social and biological network form", University of Notre Dame, Indiana, US (**External Examiner**)
06/2012-05/2015	Daniel DeWoskin (PhD in Applied and Interdisciplinary Mathematics), "Multiscale modeling of coupled oscillators with applications to the mammalian

	circadian clock", University of Michigan, Ann Arbor, Michigan, USA (**Partner Discipline Advisor**)
05/2013-06/2015	Chang Gong (PhD in Bioinformatics), "Quantifying the Generation of T Cell Immunity using a Systems Biology Approach", University of Michigan Medical School, Ann Arbor, Michigan, USA (**Committee member**)
08/2013-02/2015	Zach Harvanek (MSTP program, PhD in Molecular & Integrative Physiology), "Sexual Deprivation, Emotion, and Longevity: Neuropeptidergic Regulation of Aging in Drosophila", University of Michigan Medical School, Ann Arbor, Michigan, USA (**Committee member**)
01/2014-07/2019	Surojit Sural (MSTP program, PhD in Molecular & Integrative Physiology), "Roles of HSB-1 in Regulation of Heat Shock Factor Activity, Histone Levels, Mitochondrial Function and Longevity", University of Michigan Medical School, Ann Arbor, Michigan, USA (**Committee member**)
05/2014-04/2018	Caroline Adams (MSTP and PhD in Molecular & Integrative Physiology), "Integrating Network and Intrinsic Changes in GnRH Neuron Control of Ovulation", University of Michigan Medical School, Ann Arbor, Michigan, (**co-Chair**)
09/2015-07/2019	Zhengda Li (PhD in Bioinformatics), "Molecular Circuits of Biological Oscillators", University of Michigan Medical School, Ann Arbor, Michigan, (**Committee member**)
06/2016-04/2020	Allison Ho (PhD in Molecular & Integrative Physiology), "Defining and Characterizing Cell Signal Transductions in the Sestrin2 Pathway", University of Michigan Medical School, Ann Arbor, Michigan, USA (co-**Chair**)
06/2016-07/2020	Maxwell DeNies (PhD in Cell & Molecular Biology), University of Michigan Medical School, Ann Arbor, Michigan, USA (**co-Chair**)
10/2017-06/2021	Dana Felker (PhD in Toxicology), Department of Environmental Health Sciences, University of Michigan School of Public Health, Ann Arbor, Michigan, USA (**Committee Member**)
03/2018-08/2021	Edith Jones (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan, USA (**Committee member**)
07/2018-08/2021	Morgan Gingerich (PhD in Cellular & Molecular Biology), University of Michigan Medical School, Ann Arbor, Michigan, USA (**Committee member**)
08/2018-08/2021	Melissa Lemke (PhD in Biomedical Engineering), University of Michigan, Ann Arbor, Michigan, USA (**Committee Member**)
11/2022-	Heather Foucault-Camm (PhD in Theology), University of Notre Dame, Indiana, USA (**co-Chair**)
10/2023-	Kayoung Kim (PhD in History and Philosophy of Science), University of Notre Dame, Indiana, USA (**Committee member**)

3. Preliminary examination committees

05/2010	Anuli Anyanuw (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Chair**)
01/2011	Katherine Gurdziel (PhD in Bioinformatics), University of Michigan Medical School, Ann Arbor, Michigan (**Committee Member**)
04/2012	Mark Bolinger (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Chair**)
05/2012	Brandon Govindarajoo (PhD in Bioinformatics), University of Michigan Medical School, Ann Arbor, Michigan (**Committee Member**)
05/2012	Jacob Mertens (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Chair**)

05/2012	Chang Gong (PhD in Bioinformatics), University of Michigan Medical School, Ann Arbor, Michigan (**Chair**)
06/2012	Daniel DeWoskin (PhD in Applied and Interdisciplinary Mathematics), University of Michigan, Ann Arbor, Michigan (**Partner Discipline Advisor**)
02/2013	Jonathan Gumucio (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Chair**)
03/2013	Zachary Harvanek (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Chair**)
05/2013	Joanne Garbincius (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Committee Member**)
07/2013	Xi Chen (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Committee Member**)
05/2014	Amelia Glazier (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Committee Member**)
06/2014	Chanisa Thonusin (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Committee Member**)
04/2017	Judy Baek (MSTP/ PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Chair**)
08/2017	Joseph Starrett (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Chair**)
08/2017	Andrew Marquis (PhD in Molecular & Integrative Physiology), University of Michigan Medical School, Ann Arbor, Michigan (**Chair**)
09/2017	Dana Felker (PhD in Toxicology), Department of Environmental Health Sciences, University of Michigan School of Public Health, Ann Arbor, Michigan (**Committee Member**)
08/2018	Melissa Lemke (PhD in Biomedical Engineering), University of Michigan, Ann Arbor, Michigan (**Committee Member**)

4. Lectures, courses and seminars

University of Oxford

Undergraduate lectures

2003	Mathematical ecology and biology (3 lectures)

Graduate lectures

2002	Mathematical biology and medicine (2 lectures)
2003	Computational biology and bioinformatics (4 lectures)

Undergraduate classes and tutorials

1999-2003	Mathematical ecology and biology
2000-2004	Calculus of one variable and discrete mathematics
2000-2004	Calculus of two or more variables
2000-2004	Fourier series and two variable calculus
2000-2004	Partial differential equations in two dimensions and applications
2000-2004	Dynamics
2002-2004	Complex Analysis
2000-2004	Probability
2000-2004	Statistics

Graduate classes

2001-2004	Mathematical modelling
2001-2004	Special topics in computational and mathematical modelling

Seminars

2002-2004	Convener for mathematical ecology and biology graduate seminars

Indiana University

Undergraduate lectures/classes

2004-2006	Introduction to informatics
2007	Topics in informatics: Systems biology

Graduate lectures/classes

2004-2006	Introduction to informatics
2005	Mathematical methods for biologists
2006-2008	Mathematical methods in informatics
2007	Systems biology: A user's guide

Seminars

2005	Convener for the informatics graduate seminars
2005-2008	Convener for the honors undergraduate seminars in computer science and informatics

University of Michigan

Graduate lectures/classes

2009-2010	Cellular Physiology (4 lectures per semester)
2009-2021	Aspects of Physiological Research (1 lecture per semester)
2009-2013	Organogenesis of Complex Tissues (2 lectures per semester)
2010-2021	Computational Systems Biology in Physiology (28 lectures per semester)
2014-2015	Biophysical Methods II (2 lectures per semester)

Seminars

2009-2021	Molecular & Integrative Physiology Student Seminar, Co-convener and faculty evaluator
2010-2021	Co-convener for Systems Biology Journal Club/Workshop, Department of Molecular & Integrative Physiology

University of Notre Dame

Undergraduate classes

2023-	Ignorance
2024-	Moreau Program, First-Year Seminar

Committee, Organizational and Volunteer Service

Indiana University

08/2004-05/2008	Member, Executive Committee, Biocomplexity Institute
08/2004-05/2006	PhD Development & Implementation Committee, School of Informatics
08/2004-05/2008	Member, Graduate Program Committee, School of Informatics
08/2005-12/2005	Member, Diversity Plan Committee, School of Informatics
01/2006-05/2008	Member, Diversity Committee, School of Informatics
08/2005-07/2006	Member, Systems Biology Search Committee, Department of Biology
08/2005-07/2006	Member, Publication Initiative Committee, School of Informatics
08/2006-07/2007	Member, Biocomplexity Faculty Search Committee, Department of Physics
08/2006-05/2008	Member, Graduate Admission Committee, School of Informatics

University of Michigan

06-2008-07/2016	Instructor, Michigan Math and Science Scholars Program
08/2008-07/2010	Member, Curriculum Committee, Bioinformatics Program
08/2008-07/2010	Member, Graduate Affairs Committee, Bioinformatics Program
08/2009-09/2023	Member and co-Director, Bioartography Program
08/2009-09/2013	Member, Graduate Program Committee, Department of Molecular & Integrative Physiology

02/2010-08/2017	Physiology Representative, Faculty Ally for Diversity in Education, Rackham Graduate School
01/2010-02/2011	Master Program Development Committee, Molecular & Integrative Physiology
01/2010-03/2011	Lecturer Search Committee, Department of Molecular & Integrative Physiology
01/2010-07/2010	Tuition Return Committee, Department of Molecular & Integrative Physiology
03/2011-06/2016	Operating Committee, Master Program, Department of Molecular & Integrative Physiology
08/2011-07/2013	Seminar Committee, Center for Computational Medicine & Bioinformatics
10/2011-07/2017	Operating Committee, Medical Scientists Training Program
09/2013-08/2017	Faculty Advisor, Association of Multicultural Scientists, Program in Biomedical Sciences
12/2013-present	Academy for Educational Excellence and Scholarship, University of Michigan Medical School
05/2014-07/2017	Faculty Mentor, Michigan Biological Software and iGEM Team University of Michigan[2]
06/2014-07/2017	Cellular & Molecular Biology Representative, Faculty Ally for Diversity in Education, Rackham Graduate School
09/2014-07/2017	Cellular & Molecular Biology Program Operating Committee, Cellular & Molecular Biology Program
05/2015-08/2021	Faculty Founder and Mentor, University of Michigan SACNAS Chapter
01/2016-07/2017	Diversity, Equity & Inclusion Planning, Basic Science Diversity Working Group, University of Michigan Health System
02/2016	ad hoc Authorship Dispute Committee, Medical School
08/2016-present	co-Director, Bioartography Program
08/2016-07/2017	Member, Graduate Program Committee, Department of Molecular & Integrative Physiology
03/2017-07/2017	Chair Advisory Committee, Department of Molecular & Integrative Physiology
08/2017-08/2021	Member, Michigan Medicine Leadership Group, Medical School
08/2017-08/2021	Member, Operating Committee Endowment of Basic Sciences, Medical School
08/2017-08/2021	Member, Dean's Advisory Council of Chairs, Medical School
08/2017-08/2021	Member, Michigan Medicine Leadership and Administrators, Medical School
08/2017-08/2021	Member, Research Board of Directors, Medical School
08/2017-08/2021	Member, Internal Advisory Board, Comprehensive Cancer Center
09/2017-08/2019	ARC-Technology Services Steering Committee, University of Michigan
04/2020-08/2021	Faculty Founder and Mentor, University of Michigan Latinx Undergraduate Medical Association
06/2020-08/2021	Member, Advisory Board, Elizabeth Weiser Caswell Diabetes Institute, Medical School
07/2020-08/2021	Member, Academic Funds Flow Initiative for Realignment and Modification, Medical School
10/2020-08/2021	Member, COVID-19 Research Recovery Task Force, Medical School

University of Notre Dame

09/2021-present	Member, Deans' Council, Provost Office
09/2021-present	Member (Ex Officio), Provost Advisory Council
09/2021-present	Member (Ex Officio), Academic Council

[2] Team won Bronze Medal and Honorable Mention for Best Software Project in the 2014 iGEM International Competition, Silver Medal and Honorable Mention for Best Software Project in the 2015, iGEM International Competition, and Gold Medal and First Prize for Best Software Project in the 2016 iGEM International Competition.

09/2021 –	Member, Advanced Studies Committee
08/2022 –	Member, Executive Committee
08/2022 –	Member, Faculty Affairs Sub- Committee
09/2021-present	Member, Science & Engineering Council, Notre Dame Research
09/2021-07/2024	Chair, Dean Advisory Council, College of Science
09/2021-present	Chair, College Council, College of Science
12/2021-present	Member, Research Review Board, Notre Dame Research
03/2022-03/2023	Member, Health and Well-Begin Theme Advisory Committee, Strategic Planning Process, President's Office
08/2023-present	Member, Generative AI Task Force
08/2024-present	Chair, Dean's Executive Committee, College of Science
08/2024-present	Chair, Faculty Leadership Committee, College of Science
08/2024-present	Member, College Council, College of Science
08/2024-present	Member, College of Science Research Advisory Committee

National

1996-1997	Founding Member, Bioethical Committee, Consejo Nacional de Investigaciones Científicas y Tecnológicas, Caracas, Venezuela
2005-2007	*ad hoc* Member, Scientific Advisory Panel, Office of Chemical Safety and Pollution Prevention Science Advisory Panel, Environmental Protection Agency, Washington DC
2009-2010	Member, Board of Scientific Counselors, Computational Toxicology Subcommittee, Environmental Protection Agency, Washington DC
2017	Member, Board of Scientific Counselors, Division of Intramural Research, National Heart, Lung and Blood Institute, Bethesda, Maryland
2020-present	Member, External Advisory Committee, National Institute of Environmental Health Sciences Superfund Center, Michigan State University, Lansing, Michigan
2021	Member of the Academic Leadership Panel, Committee on Elementary Particle Physics, The National Academies of Sciences, Engineering, and Medicine.
2023-present	Member, Board of Directors, BioCrossroads, State of Indiana
2023-present	Member, Internal Advisory Committee, Indiana Clinical and Translation Science Institute
2023-present	Member, Rare Disease Advisory Council, Indiana Department of Health, State of Indiana

International

2006-2007	Member, Bellman Prize Committee, Mathematical Biosciences, Elsevier
2008-present	Member, Steering Committee, Centre for Mathematical Medicine, Fields Institute, Toronto, Canada
2009	Member, External review panel, Quality Research Outputs, South Africa's National Research Foundation
2010-2011	Member, Bellman Prize Committee, Mathematical Biosciences, Elsevier
2014-2017	Member, Scientific Advisory Committee, Mathematical Bioscience Institute, Ohio State University, Columbus, Ohio, USA
2016-present	Member, Standards for Reporting Enzymology Data (STRENDA) Commission, Beilstein Institut, Frankfurt am Main, Germany
2021-present	Member, Academic Committee of the Barry Scholarship, Canterbury Institute, Oxford, UK

Conference organized

1. "Latinovation: Making Connections", R&D Procter & Gamble, Latin American Division, Caracas, Venezuela, September 18th, 1998 (***Organizing Committee***).
2. "III Genomics Informatics day: Bioinformatics, computational biology, systems biology, and mathematical biology - Their relationship" (international conference), University of Oxford, January 22nd, 2005 (***Co-organizer***)
3. "Biocomplexity 7: Unravelling the function and kinetics of biochemical networks - From Experiments to Systems Biology" (international conference), Indiana Memorial Union, Indiana University, Bloomington, May 9-11th, 2005 (***Organizer***)
4. "Biocomplexity 9: Multiscale modeling of multicellular systems" (*international conference*), Indiana Memorial Union, Indiana University, Bloomington, May 8-10th, 2006 (***Organizer*** in collaboration with Philip K. Maini, Timothy Newman and James Glazier)
5. "ALifeX: Tenth International Conference on the Simulation and Synthesis of Living Systems" (international conference), Indiana University, Bloomington, June 3-7th, 2006 (***Program Committee***)
6. "Minisymposium: Identifiability and Inference of Biochemical Pathways", Joint Annual Meeting of The Society of Mathematical Biology and SIAM Conference on the Life Sciences, North Carolina State University, Raleigh, North Carolina, USA, July 31-August 4th, 2006 (***Organizer*** in collaboration with Rami Tzafrini)
7. "Workshop in Computational Methods for Bioinformatics and Systems Biology: Portuguese Conference on Artificial Intelligence", Guimarães, Portugal, December 3-7th, 2006 (***Program Committee)***
8. "Special Section: Some Mathematical Problems in Biology: From Macromolecules to Ecosystems", American Mathematical Society Central Section Meeting, Indiana University, Bloomington, Indiana, April 5-6th, 2007 (***Organizer*** in collaboration with Roger Teman)
9. "Second International Workshop on Practical Applications of Computational Biology & Bioinformatics" (international conference), Salamanca, Spain, October 22-24th, 2008 (***Program Committee***)
10. "Systems Biology Symposium: Celebrating the Diversity of Contemporary Integrative Biology", Ann Arbor, Michigan, December 1st, 2009 (***Organizer*** in collaboration with John A. Williams and Bishr Omary)
11. "Annual Meeting of Society for Mathematical Biology", Rio de Janeiro, Brazil, July 26-29th, 2010 (***Scientific Committee***)
12. "Second Systems Biology Symposium: From molecules to organisms", Ann Arbor, Michigan, April 4th, 2011 (*Organizer* in collaboration with John A. Williams)
13. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2011)", Sofia, Bulgaria, June 15-18, 2011 (***Program Committee***)
14. "Joint Meeting of European Society for Mathematical and Theoretical Biology and the Society for Mathematical Biology", Cracow, Poland, June 28-July 2nd, 2011 (***Organizing and Scientific Committee***)
15. "Biomat 2011 – International Symposium on Mathematical and Computational Biology", Santiago de Chile, November 5-10th, 2011 (***Scientific Advisory Committee***)
16. "12th International Conference on Experimental Chaos and Complexity", Rackham Building, University of Michigan, Ann Arbor, Michigan, May 16-19 (***Scientific Advisory Committee***)
17. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2012)", Sofia, Bulgaria, June 17-22, 2012 (***Program Committee***)
18. "6th Annual Midwest Islet Club Conference", Ann Arbor, Michigan, April 22nd-23rd, 2013 (**Organizing Committee**)
19. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2013)", Sofia, Bulgaria, June 16-21, 2013 (***Steering Committee***)
20. "From Cells to Ecosystems: Frontiers in Collaborative Quantitative Physics-Based Multiscale Modeling of Biological Processes", Pan American Advance Studies Institute, Universidade

federal do Rio Grande do Sul, Rio Grande, Porto Alegre, Brazil, July 8-26, 2013 (***Advisory Committee***)

21. "Diabetes Systems Biology Workshop", Center for Mathematical Medicine, Fields Institute, Toronto, Canada, March 24-26, 2014 (***Organizer*** in collaboration with Anmar Khandra and Siv Sivaloganathan)
22. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2014)", Sofia, Bulgaria, June 22-27, 2014 (***Steering Committee***)
23. "Targeting Cancer Cell Proliferation and Metabolism Networks", Mathematical Biosciences Institute, Ohio State University, Columbus, Ohio, USA, March, 23-25, 2015 (***Organizing Committee***)
24. "Nonlinear Dynamics in Biology Systems", Joint CAMBAM-MBI-NIMBioS Summer School, Montreal, Canada, June 1st-12th, 2015 (**Organizer**)
25. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2015)", Blagoevgrad, Bulgaria, June 14-19, 2015 (***Steering Committee***)
26. "Molecules and Machines", Annual Symposium of the University of Michigan Protein Folding Diseases, Ann Arbor, Michigan, September 18, 2015 (***Organizing Committee***)
27. "Workshop on Mathematical Oncology VI", Centre for Mathematical Medicine, Fields Institute, Toronto, Canada, April 11-13, 2016 (***Organizer*** in collaboration with M. Kohandel, Philip K. Maini and Siv Sivaloganathan)
28. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2016)", Blagoevgrad, Bulgaria, June 19-25, 2016 (***Steering Committee***)
29. "The 2016 European Conference on Mathematical and Theoretical Biology jointly with the 2016 Society for Mathematical Biology Annual Conference", Nottingham, UK, July 11-15, 2016 (***Scientific Committee***)
30. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2017)", Skukuza Camp, Kruger Park, South Africa, June 25-30th, 2017 (***Steering Committee***)
31. "The 2017 Society for Mathematical Biology Annual Meeting", University of Utah, July 17-20th, 2017 (***Scientific Committee***)
32. "6th Chinese Society for Mathematical Biology International Conference on Mathematical Biology", University of Beijing, Beijing, China, June 15-18th, 2018 (***Scientific Committee***)
33. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2018)", Bulgarian Academy of Sciences, Sofia, Bulgaria, June 24-29, 2018 (***Steering Committee***)
34. "2018 Annual Meeting of the Society for Mathematical Biology and the Japanese Society for Mathematical Biology", The University of Sydney, Australia, July 8-12th, 2018 (***Steering Committee***)
35. The Maths of Biology – Celebrating the day of mathematical biology 10/10", The Royal Swedish Academy of Sciences, Institut Mittag-Leffler, Djursholm, Sweden, October 8-12th, 2018 (***Organizing Committee***)
36. 1st EnzymeML Workshop, University of Stuttgart, Stuttgart, Germany, November 19-20th, 2018 (***co-Organizer***)
37. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2019)", Polish Academy of Science, Institute of Mathematics, Będlewo Conference Center, Poland, June 16-24, 2019 (***Steering Committee***)
38. "2019 Annual Meeting of the Society for Mathematical Biology", Concordia University and McGill University, Montreal, July 22-26th, 2019 (***Steering Committee***)
39. "2019 Beilstein Enzymology Symposium", Rüdesheim, Germany, September 10-12th, 2019 (***Scientific Committee***)
40. "On growth and pattern formation", Mathematical Institute, University of Oxford, September 18-19th, 2019 (***Organizing Committee***)
41. "2020 Annual Meeting of the Society for Mathematical Biology", August 17-20th, 2020 (***Organizing Committee***)

42. 2nd EnzymeML Workshop, University of Stuttgart, Stuttgart, Germany, May 10th-14th, 2021 (***co-Organizer***)
43. "2021 Annual Meeting of the Society for Mathematical Biology", June 13-17th, 2021 (***Scientific Committee***)
44. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2021)", University of Pretoria, South Africa, June 20-25, 2021 (***Steering Committee***)
45. MCHBS 2021 Virtual Workshop: "Mathematical Modelling and Control for Healthcare and Biomedical Systems", Italian National Research Council (CNR), Italy, September 28-30th, 2021 (***Scientific Committee***)
46. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2022)", Sofia, Bulgaria, June 27 to July 1, 2022 (***Steering Committee***)
47. "The 2022 European Conference on Mathematical and Theoretical Biology", University of Heidelberg, Germany, August 31 to September 4, 2022 (***Organizing and Scientific Committee***)
48. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2023)", Pomorie, Bulgaria, June 18-23, 2023 (***Steering Committee***)
49. 4th EnzymeML Workshop, Rüdesheim, Germany, September 26-27th, 2023 (***co-Organizer***)
50. Organs and Origins Conference Series: "What is an Organ?", University of Notre Dame, College of Science and the McGrath Institute for Church Life, April 5-6, 2024 (***co-Organizer***)
51. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2024)", Cutty Sark, South Africa, June 18-23, 2024 (***Steering Committee***)
52. 5th EnzymeML Workshop, Rüdesheim, Germany, September 24-26th, 2024 (***co-Organizer***)
53. "International Conference on Mathematical Methods and Models in Biosciences (Biomath 2025)", Bulgarian Academy of Sciences, June 15-20, 2025 (***Steering Committee***)
54. 6th EnzymeML Workshop, Rüdesheim, Germany, September 29 to October 2nd, 2025 (***co-Organizer***)

Industry

1997-1998	Member, Global Method Validation Team, R&D Procter & Gamble
1997-1998	Member, Global Sensory Expertise Group, R&D Procter & Gamble
1997-1998	Member, Global Protocol Standardization Committee, R&D Procter & Gamble

Community Service

01/2005-01/2008	Board Member, Tamarron Homeowner Association, Bloomington, IN
03/2009-07/2009	Member, Organizing Committee for Ann Arbor City Tennis Tournament Ann Arbor Area Tennis Community Association
09/2011-present	President, Huron Mills Association, Ann Arbor, Michigan
03/2015-08/2021	Mentor and Instructor, MiRcore/GIDAS Network of High School Students, Ann Arbor, Michigan
09/2020-present	Board of Directors, Bur Oak Foundation, Ann Arbor, Michigan

Industry and Consulting Positions, Advisory Board, and Expert Witness

11/1989-07/1991	Library Assistant (part time), English Literature and Language Teaching Information Service (ELLTIS), The British Council, Caracas, Venezuela
03/1997-08/1998	Scientists/Senior Scientist, Latin American Division, R&D Procter & Gamble Caracas, Venezuela
06/2023-present	Scientific Advisory Board, PD-value B.V., Utrecht, Netherlands

Ad hoc consultant for biotechnology, pharmaceutical, chemical industry, and patent & intellectual property law firms.

Visiting Lectureships, Seminars and Extramural Invited Presentations

Invited research visits and professorships

07/1996-08/1996	Academic visitor, Centre for Mathematical Biology, Mathematical Institute, Oxford, UK
07/2003	Academic visitor, Bioengineering Institute, University of Auckland, Auckland, New Zealand
09/2003	Visiting scientist, Stowers Institute for Medical Research, Kansas City, MO, USA
01/2005-12/2006	Academic visitor (non-resident), Centre for Mathematical Biology, Mathematical Institute, Oxford, UK
04/2006	Research Professor, Computational Biology Collaboratorium, Instituto Gulbenkian de Ciencia, Oeiras, Portugal
11/2008	Academic visitor, Centre for Mathematical Biology, Mathematical Institute, Oxford, UK
07/2009	Research Professor, Computational Biology Collaboratorium, Instituto Gulbenkian de Ciencia, Oeiras, Portugal
12/2009	Visiting scholar, Catalonian Reference Network on Theoretical and Computational Chemistry, University of Barcelona and Autonomous University of Barcelona, Barcelona, Spain
02/2012-03/2012	Academic Visitor, Centre for Synthetic & Systems Biology, University of Edinburgh, Scotland, UK
04/2013-05/2013	Academic Visitor, Centre for Mathematical Biology, Mathematical Institute, Oxford, UK
11/2013	Visiting Professor of Excellence, Department of Chemistry, University of Barcelona, Barcelona, Spain
10/2018	Academic visitor, Institut Mittag-Leffler, Swedish Academy of Sciences, Djursholm, Sweden
09/2019	Academic visitor, Centre for Mathematical Biology, Mathematical Institute, Oxford, UK
09/2022-present	Senior Reader, Canterbury Institute, Oxford, UK.
04/2023	Academic visitor, Centre for Mathematical Biology, Mathematical Institute, Oxford, UK

International lectureships

1. Instituto Gulbenkian de Ciência, Oeiras, Portugal, April 1st-8th, 2006. PhD in Computational Biology, "Enzyme kinetics and metabolic networks" (one week course).
2. Universidad de Monteávila, Caracas, Venezuela, June 17-24th, 2006. Graduate Certificate in Bioethics, "When does life begin? Conception and development of the human embryo" (one week course).
3. Cancer Systems Biology. Transatlantic Summer School, Rostock-Warnemünde , Germany, June 7th-10th, 2009, "Modelling reactions 'the right way' inside the cells"
4. University of Barcelona, Barcelona, Spain, November 11th-15th, 2013. Undergraduate in Biochemistry and Molecular Biology, "Modelling reactions inside cells" (one week course).
5. McGill University, Montreal, Canada, June 1st-12, 2015. Nonlinear dynamics in biology systems, "Deterministic models of reaction kinetics: Use and abuse of the steady-state approximation"

Invited presentations in scientific meetings

1. 1er. Simposium Nacional, El Humanismo en la Medicina, Caracas, Venezuela, October 28th, 1995, "Perspectivas: Una visión ética de la clínica"

2. One day dedicated to the mathematical and computational modelling in biology; Centro de Física, Instituto Venezolano de Investigaciones Científicas (IVIC), November 6, 1997, "On cellular stability"
3. Four studies in Mathematical Biology, University College London (UCL), March 10th, 2002, "On indistinguishable biochemical pathways. Deduction of the reaction mechanism for complex biochemical reactions"
4. Workshop on Theoretical Biophysics, Institute of Biology, Department of Theoretical Biophysics, Hiddensee, Germany, April 2-5th, 2003, "On indistinguishable biochemical pathways. Deduction of the reaction mechanism for complex biochemical reactions"
5. Mathematical Analysis of Metabolic Networks. Mathematical Interdisciplinary Research Day (MIR@W Day), Mathematics Institute, University of Warwick, June 2nd, 2003, "Transient kinetics consequences in the reduced description of biochemical networks: The application of the quasi-steady-state approximation to an open enzymatic reaction"
6. Modelling Cellular Function, Auckland, New Zealand, June 14th-18th, 2003, "Biochemical reaction kinetics in non-homogeneous media: Simulations and rate laws"
7. Annual Meeting of the Society for Mathematical Biology, University of Dundee, August 6-9th, 2003, "The best contender models for somitogenesis"
8. VIII Venezuelan Congress of Hematology, Venezuelan Society of Hematology, Radisson Eurobuilding Hotel, Caracas, Venezuela, June 23-26th, 2005, "Proyecto Genoma Humano: Clonación Terapéutica y Reproductiva", "Factores de regulación de células hematopoyéticas protenitoras y sanguineas" and "Uso de la genética en tratamiento de hemofilia" (**plenary speaker**)
9. Biocomplexity VIII: Application of methods of stochastic systems and statistical physics in biology, The Interdisciplinary Center for the Study of Biocomplexity, University of Notre Dame, October 28-30th, 2005, "Lesson from the computational modelling of reactions in intracellular environments"
10. Workshop (close door): The Intracellular Environment, Cold Spring Harbor Laboratory, Banbury Center, November 13th-16th, 2005, "Stochastic and deterministic kinetics for modelling of reactions in intracellular environments with macromolecular crowding"
11. Conference on the 10th Anniversary of the Bioethical Committee, Hospital Universitario de Caracas, Universidad Central de Venezuela, November 14-17th, 2005, "Es humano tu clon" (**plenary speaker**) and "Aspectos éticos normativos y éticos del uso de embriones pre-implantanción"
12. 55th Annual Convention of the Venezuelan Association for the Advancement of Science, Universidad Central de Venezuela, Caracas, Venezuela, November 21-26th, 2005, "Unravelling the nature of the segmentation clock" (**plenary speaker**)
13. Join06, JOrnadas de INformática, Universidad do Minho, Braga, Portugal April 5-7th, 2006, "How can a systems biologist build up a clock?" (**plenary speaker**)
14. Joint Annual Meeting of The Society of Mathematical Biology and SIAM Conference on the Life Sciences, North Carolina State University, Raleigh, North Carolina, USA, July 31-August 4th, 2006, "The apparent first-order kinetics of the substrate disappearance in enzyme digestion"
15. Joint Annual Meetings of the Society for Mathematical Biology and the Japanese Society for Mathematical Biology, San Jose, California, USA, July 31-August 4rd, 2007, "The dynamics of reaction pathways in intracellular conditions"
16. Biomedical Engineering Society Annual Fall Meeting, Los Angeles, California, USA, September 26-29th, 2007, "Multiscale models of vertebrate Segmentation" and "Reconstruction of biochemical reaction mechanisms and pathways from time series and steady state data"
17. Annual Meeting of the Society for Mathematical Biology, Toronto, Canada, July 30th-August 2nd, 2008, "A model of endoplasmic reticulum stress in pancreatic β-cells"
18. Dynamical Systems in physiological modeling, Purdue University, October 11th-13th, 2008, "A models of the unfolded protein response in β-cells"

19. Mathematical Challenges in Developmental Biology. Workshop 3: Morphogenesis, Limb Growth, Gastrulation, Somitogenesis and Neural Tube Development, Mathematical Bioscience Institute, Ohio State University, November 17th-21st, 2008, "Investigating two mechanisms of neural crest migration"
20. Transatlantic Strategic Workshop (closed-door): Cancer Systems Biology, Rostock-Warnemünde, Germany, June 8th-11th, 2009, "SWOT Analysis for Modelling Sub-cellular Processes"
21. International Conference on Mathematical Biology and Annual Meeting of the Society of Mathematical Biology, University of British Columbia, Vancouver, Canada, July 27th-30th, 2009, "How is protein load sensed in the endoplasmic reticulum?"
22. Systems Biology Symposium: Celebrating the Diversity of Contemporary Integrative Biology. University of Michigan, Ann Arbor, Michigan, USA, December 1st, 2009, "New insights into Protein Homeostasis Mechanism in the Endoplasmic Reticulum Lumen"
23. The Fifth Annual Symposium on Predictive Health: Human Health – Molecules to Man. The Emory/Georgia Tech Predictive Health Institute, Atlanta, Georgia, USA, December 14th-15th, 2009, "Metabolism and personalize medicine: Can computational systems biology make all the difference?" (**plenary speaker**)
24. 2010 Annual Meeting of the Society for Mathematical Biology and 10th International Symposium on Mathematical and Computational Biology (Biomat 2010), Rio de Janeiro, Brazil 24-29th July, 2010, "Stability of open pathways"
25. 11th International Conference On Systems Biology (ICSB 2010), Edinburgh, Scotland, UK, October 10-16th, 2010, "Identification of aggregation reaction conditions associated with toxic aggregation thresholds found in conformational diseases"
26. 8th European Conference on Mathematical and Theoretical Biology, and Annual Meeting of the Society for Mathematical Biology, Krakow, Poland, June 28th-July 2nd, 2011, "A model of threshold behavior reveals rescue mechanisms of bystander proteins in conformational diseases"
27. BIOMATH 2012 International Conference on Mathematical Methods and Models in Biosciences, Sofia, Bulgaria, June 17th-22nd, 2012, "A model of chaperone overload in aging organism" (**plenary speaker**)
28. The Teratology Society, 52nd Annual Meeting "Global Perspectives in Teratology", Baltimore, Maryland, USA, June 23rd-27th, 2012, "How does computational modeling reveal mechanisms of cell chain migration?" (**Wiley Blackwell lecturer**)
29. Blackwell-Tapia Conference 2012, Institute for Computational and Experimental Research in Mathematics (ICERM), Brown University, Providence, Rhode Island, USA, November 9-10, 2012, "How a dynamical model can predict phenotype from genotype?"
30. 13th International Symposium on Mathematical and Computational Biology, The Fields Institute, Toronto, Ontario, Canada, November, 4th-8th, 2013, "Modeling dominant protein interactions that influence the pathogenesis of protein folding diseases" (**plenary speaker**)
31. The Biophysical Society 58th Annual Meeting, Cellular Stress, Protein Folding, and Disease Symposium, February 15-19th, 2014, "Protein interactions and transition times that influence the pathogenesis of protein folding diseases"
32. Workshop on Diabetes Systems Biology, Fields Institute, Toronto, Canada, March 24-26th, 2014, "A comprehensive data analysis reveals that pancreatic β-cells net growth is population density-dependent throughout the lifespan of rats"
33. Current Topics Workshop: Molecular to Systems Physiology, Mathematical Bioscience Institute, Ohio State University, Ohio, USA, May 5-9th, 2014, "On the mechanism of sensing unfolded protein in the endoplasmic reticulum"
34. Emphasis Workshop: Targeting Cancer Cell Proliferation and Metabolism Networks, Mathematical Bioscience Institute, Ohio State University, Ohio, USA, March 23-27th, 2015, "Reverse engineering signaling pathway in cancer cells: Effects of honokiol on the notch signaling pathway as a case study"

35. Emphasis Workshop: Dynamics in Networks with Special Properties, Mathematical Bioscience Institute, Ohio State University, Ohio, USA, January 25-29th, 2016, "Network motifs provide signatures that characterize metabolism of cellular organelles"
36. 10th European Conference in Mathematical and Theoretical Biology, and Annual Meeting of the Society for Mathematical Biology, University of Nottingham, UK, July 11-15th, 2016, "Villification of the Turing reaction-diffusion model"
37. A3-NIMS Joint Workshop on Interdisciplinary Research Connecting Mathematics and Biology, Center for Applications of Mathematical Principles, National Institute for Mathematical Sciences, Daejeon, Korea, May 12-14th, 2017, "Challenges in measuring kinetic parameter of enzyme catalyzed reaction" (**plenary speaker**)
38. World Metrology Day Symposium, Joint Initiative for Metrology in Biology, National Institute of Standards and Technology and Stanford University, May 22nd, 2017, "Standards for Reporting Enzymology Data (STRENDA)"
39. 2017 Annual Meeting of the Society for Mathematical Biology, University of Utah, Salt Lake City, Utah, USA, July 17-20th, 2016, "Education SubGroup Symposium: Teaching modeling and simulation using MATLAB: Case studies in systems biology and pharmacology"
40. 2017 Beilstein Enzymology Symposium "Enzymes in Transformation and Signalling", Rüdesheim, Germany, September 19-21, 2017, "Designing Enzyme Assays for the Accurate Measurement of Enzyme Kinetic Parameters" (**plenary speaker**)
41. Centre Européen de Calcul Atomique et Moléculaire (CECAM) Wrokshop "Proteins in realistic environments: simulation meets experiment", CECAM-DE-SMSM, University of Stuttgart, 23-25th, 2018, "Exploring standardized protocols to measure and estimate enzyme kinetic parameters" (**plenary speaker**)
42. 2018 Beilstein Bozen Symposium "Information and Noise: Chemistry, Biology and Evolution. Creating Complex Systems", Rüdesheim, Germany, June 5-7th, 2018, "Macromolecular crowding is an important organizing principle for chemical catalysis inside biomolecular condensates" (**plenary speaker**)
43. 2018 Fall ACS Meeting, Symposia "Reporting & Reproducibility of Chemistry Research Data", Boston, USA, August 19-25th, 2018, "Better reporting for better measurements: Enzyme kinetics as a case study"
44. Workshop 1010: The Maths of Biology, Institut Mittag-Leffler, Swedish Academy of Science, Djurshold, Sweden, October 8-12th, 2018, "How to design an optimal sensor network for the unfolded protein response"
45. 2019 Beilstein Enzymology Symposium "Molecular Functions, Catalysis and Regulation", Rüdesheim, Germany, September 10-12th, 2019, "The uncertainty of the Michaelis constant, K_M, in experimental reproducible enzyme kinetic public data"
46. On growth and pattern formation: A celebration of Philip Maini's 60th birthday, University of Oxford, UK, September 18-19th, 2019, "Better mathematical models for better measurements: Enzyme kinetics as a case study"
47. 2019 Leadership Retreat, Association of Chairs of Departments of Physiology, Hotel Casa Santo Domingo, Antigua, Guatemala, December 6th, 2019, "Reproduciblity is a scientific challenge not a scientific crisis".
48. Physiology Updates for Physicians in Training, Universidad Francisco Marroquin Medical School, Ciudad de Guatemala, Guatemala, December 6th, 2019, "Measurement in Life Sciences and Medicine: Thinking Quantitatively in the Biomedical Sciences".
49. 20th International Symposium on Mathematical and Computational Biology, Falconara Marittima, Region of Marche, Province of Ancona, Italy (held virtually due to COVID-19 pandemic), November, 1st-7th, 2020, "Developing models for the accurate measurement of enzyme kinetic parameters" (**plenary speaker**)
50. 3rd EnzymeML Workshop, Rüdesheim, Germany, October 18-19th, 2022, "Challenges and strategies in enzyme kinetics: Launching a Round Robin Reproducibility Study".

51. 5th Annual Symposium on Multiscale Cell Fate, NSF-Simons Center for Multiscale Cell Fate Research, Beckman Center of the National Academies of Sciences and Engineering, October 24th-25th, 2022, "Is the publicly available data of physical-chemistry constants reliable to build multiscale models in biology?"
52. Modeling, Idealization and Truth: A dialogue between contemporary philosophy of science and the Aristotelian tradition, Pontifical University of St. Thomas Aquinas, February 24-25th, 2023, "Uses and abuses of models in the life sciences: How can life scientists develop better models and theories?" (**plenary talk**)
53. 2023 Annual Meeting of the Society for Mathematical Biology, Celebrating Society's 50th Anniversary, Ohio State University, Columbus, OH, USA, July 17-21st, 2023, "Better approximations can't make up for poor experiments: Enzyme kinetics as case study" (**plenary talk**)
54. 2024 Spine Summitt, Annual Meeting of CNS Section on Disorders of the Spine and Peripheral Nerves from the American Association of Neurological Surgeons, Las Vegas, USA February 21-24, 2024, "(productive) Failure: Transforming Setbacks into Breakthroughs" (**visionary speaker**)
55. 2024 Symmetry and Perturbation Theory workshop on Chemical Reaction Networks (SPT–CRN 2024), Pula, Sardinia, Italy, June 9-15, 2024, "Experimental uncertainty in enzyme kinetics: An ill-posed problem and experimental bias"

Extramural seminars

1. Instituto Venezolano de Investigaciones Científicas, Physics Center, Physics Seminars, November 6th, 1997, "Enzyme kinetics à la Leonahrd Euler"
2. University of Auckland, Auckland, New Zealand, Bioengineering Institute Colloquium, July 23th, 2003, "Transient kinetics consequences in the reduced description of biochemical networks: The application of the quasi-steady-state approximation to an open enzymatic reaction"
3. Indiana University, Biocomplexity Colloquium, Department of Physics, December 1st, 2003, "Reaction kinetics in intracellular environments with macromolecular crowding: simulations and rate laws"
4. Rutgers University, DIMACS/BIOMAPS Seminar Series on Quantitative Biology and Epidemiology, February 5th, 2004, "Reaction kinetics in intracellular environments with macromolecular crowding: simulations and rate laws"
5. Rutgers University, Mathematical Colloquium, Department of Mathematics, February 6th, 2004, "The quasi-steady-state approximation in enzyme kinetics"
6. University of Warwick, Warwick Systems Biology Center Seminars, May 18th, 2004, "What are the kinetic laws that describe intracellular reactions"
7. Purdue University, Weldon School of Biomedical Engineering, Biomedical Engineering Seminars, September 21st, 2005, "Formation of vertebral precursors"
8. Purdue University, Bioinformatics Seminars, Department of Statistics, October 18th, 2005, "Unraveling the nature of the segmentation clock"
9. Instituto Gulbenkian de Ciência, Oeiras, Portugal, IGC Seminars, April 10th, 2006, "A clock and wavefront mechanism for somite formation"
10. Purdue University, School of Chemical Engineering, Chemical Engineering Colloquium, November 14th, 2006, "Systems biology and biochemistry"
11. Kalamazoo College, Complex Systems Colloquium, December 6th, 2006, "Unraveling the nature of the segmentation clock" (**distinguish speaker**)
12. Northwestern University, Engineering Science and Applied Mathematics Department, ESAM Colloquium, January 16th, 2007, "Enzyme reactions within the cells"
13. Iowa State University, Mathematical Biology Seminars, February 7th, 2007, "Enzyme reactions within cells"
14. University of Michigan Medical School, Center for Computational Medicine & Biology, CCMB Seminars, April 25th, 2007, "Rate laws and mechanisms discovery within cells"

15. University of Michigan Medical School, Molecular & Integrative Physiology Colloquium, June 4th, 2007, "Modelling signaling gradients in development"
16. University of Michigan, Department of Mathematics, Applied and Interdisciplinary Mathematics Seminars, September 14th, 2007, "How do cells form rounded segments?"
17. Georgia Institute of Technology, Integrative Systems Biology Institute, Distinguish Seminar Series, April 8th, 2009, "Modeling reactions 'the right way' inside the cells" (**distinguish speaker**)
18. University of Connecticut Health Center, Center for Cell Analysis and Modeling, CCAM Seminars, May 13th, 2009, "How is protein load sensed in the endoplasmic reticulum?"
19. Instituto Gulbenkian de Ciência, Oeiras, Portugal, IGC Seminars, July 2nd, 2009, "How is protein load sensed in the endoplasmic reticulum?"
20. Universitat de Barcelona, The Catalonian Reference Network on Theoretical and Computational Chemistry, December 10th, 2009, "Modelling reactions inside the cells"
21. Univeridad Autónoma de Barcelona, The Catalonian Reference Network on Theoretical and Computational Chemistry, Spain, December 11th, 2009, "Modelando reacciones dentro de las células"
22. Centre for Mathematical Medicine Seminars, Centre for Mathematical Medicine, Fields Institute, Toronto, Canada, February 20th, 2010, "How is protein load sensed in the endoplasmic reticulum?"
23. Minority Access to Research Career Program, University of Arizona, Tucson, September 27th, 2010, "Modeling reactions inside the cell"
24. Department of Chemistry and Biochemistry, University of Lethbridge, Canada, November 30th, 2010, "How is protein load sensed in the endoplasmic reticulum?"
25. Department of Applied and Computational Mathematics and Statistics Colloquium, University of Notre Dame, USA, April 18th, 2011, "A model of threshold behavior reveals rescue mechanisms of bystander proteins in conformational diseases"
26. Department of Electric and Computing Engineering Seminars, University of Texas, San Antonio, Texas, USA, April 27th, 2012, "Computational modeling of cell chain migration reveals mechanisms that sustain follow-the-leader behavior"
27. Computer Science and Engineering Lecture Series 2011-2012, Michigan State University, East Lansing, Michigan, USA, October 26th, 2012, "A reactor model of endoplasmic reticulum to investigate protein folding diseases"
28. Department of Computer Science and Mathematical Institute, Computational Biology Seminars, Trinity Term 2013, University of Oxford, May 17th, 2013, "How a dynamical model can predict phenotype from genotype".
29. Stowers Institute for Medical Research, Developmental Biology Seminars, Kansas City, Missouri, August 15th, 2013, "Investigating developmental mechanisms with agent-based models"
30. Department of Mathematics and Statistics, Mathematics Colloquium, Georgia State University, Atlanta, Georgia, September 23rd, 2013, "How a dynamical model can predict phenotype from genotype".
31. Mathematical Bioscience Institute, Colloquium, Ohio State University, Columbus Ohio, January 27th, 2014, "Modeling dominant protein interactions that influence the pathogenesis of protein folding diseases"
32. Department of Physiology, McGill University, Montreal, Canada, March 21st, 2014, "How a dynamical model can predict phenotype from genotype: Mutant INS-gene Induced Diabetes of Youth as a case study."
33. The New Mexico Center for the Spatiotemporal Modeling of Cell Signaling, University of New Mexico, Albuquerque, New Mexico, April 14th, 2014, "Investigating proinsulin cross dimerization to rescue insulin production in a model of diabetes of youth"

34. Center for Nonlinear Studies, q-Bio Seminar Series, Los Alamos National Laboratory, Los Alamos, New Mexico, April 15th, 2014, "Modeling protein processing in pathogenesis of protein folding diseases exhibiting threshold phenomenon"
35. Computational Biology Program Seminars, Sloan Kettering Cancer Center, New York City, New York, December 4th, 2014, "How to reverse engineer the intracellular signal transduction circuitry of cancer cells"
36. Mathematical Biology Seminars, Department of Mathematics, University of Utah, Salt Lake City, Utah, March 4th, 2015, "Investigating the modulation of Drosophila aging by linking sexual perception and reward"
37. Science at the Edge, Quantitative Biology, Gene Expression in Development & Disease Seminar, Michigan State University, East Lansing, Michigan, September 11th, 2015, "Sex, reward or death (in flies)"
38. Mathematics Colloquium, Department of Mathematics, University of Texas at Arlington, Arlington, Texas, October 2nd, 2015, "Modeling dominant protein interactions that influence the pathogenesis of protein folding diseases"
39. Mathematical Bioscience Institute Colloquium, The Ohio State University, Columbus, Ohio, USA, December 7th, 2015, "The long road to reproducibility in biomedical sciences also requires mathematical models"
40. Department of Chemistry & Biochemistry Seminars, The Ohio State University, Columbus, Ohio, USA, February 17th, 2016, "Chemical kinetics for reproducible research to combat protein aggregation diseases"
41. Department of Biochemistry & Molecular Biology Seminars, St. Louis University Medical School, St. Louis, Missouri, USA, October 10th, 2016, "Challenges in the reproducibility of kinetic parameter estimates for enzyme catalyzed reactions"
42. Centre for Mathematical Medicine Seminars, Fields Institute, Toronto, Canada, November 23rd, 2016, "The inverse problem is crucial for the design of quantitative experiments in drug development"
43. Department of Biological Sciences, University of Maryland Baltimore County, Baltimore, Maryland, USA, March 2nd, 2017, "Villification in the mouse: Coordination of signals and mechanical forces control intestinal villus patterning?" (**eminent speaker**)
44. Centre for Mathematical Medicine Seminars, Fields Institute, Toronto, Canada, February 28th, 2018, "Theory of the reactant-stationary kinetics for a coupled enzyme assay"
45. Department of Biomedical Engineering Seminars, Purdue University, West Lafayette, Indiana, USA, November 6th and 7th, 2018, "Is there a reliability crisis in systems biology?" and "Exploring treatments for conformational diseases using Ockham's razor" (**distinguished seminar speaker**).
46. Department of Biomedical Engineering and Mechanics, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, USA, March 18th, 2019, "Are we measuring biochemical systems with rigor?"
47. Department of Biomedical Informatics Seminar, Ohio State University College of Medicine, August 30th, 2019, "The uncertainty of the Michaelis constant, K_M, in experimental reproducible enzyme kinetic public data"
48. Department of Mathematics Colloquium, Florida State University, October 4th, 2019, "Analyzing the validity of scaling analysis and simplifications for better measurements of biochemical reactions"
49. Interdisciplinary Training in Complex Networks and Systems, Indiana University, November 1st, 2019, "Is the publicly available data of physical-chemistry constants reliable to build large network models?" (***Eminent lecture***)
50. Department of Applied Mathematics Colloquium, University of Western Ontario, December 11th, 2019, "Scaling analysis and simplifications for better measurements of enzyme catalyzed reactions"

51. Mathematical and Computational Biology Seminar Series, University of Massachusetts Amherst, July 27th, 2020, "Developing models for the accurate measurement of enzyme kinetic parameters"
52. Physiology Hot Summer Seminar Series, Louisiana State University Health Sciences Center, New Orleans, August 13th, 2020, "Gaining insights into the proteostasis networks with mathematical models"
53. Department of Pharmacology and Physiology Seminar Series, Saint Louis University School of Medicine, October 1st, 2020, "Exploring treatments for protein folding diseases using a systems biology approach"
54. Laboratory of Cellular & Developmental Biology, National Institute of Diabetes and Digestive and Kidney Diseases, February 11th, 2021, "Villification in the mouse: Coordination of signals and mechanical forces control intestinal villus patterning?"
55. Bioscience Seminars, University of Texas El Paso, College of Science, March 13th, 2021, "Sensing mechanisms and regulation of proteostasis: A modeling approach"
56. Centre for Mathematical Medicine Seminar Series, Fields Institute for Research in Mathematical Sciences, December 15th, 2023, "On the unreasonable effectiveness of the quasi-steady state approximation".

Intramural seminars

1. University of Oxford, Mathematical Institute, Mathematical Biology and Ecology Seminars, February 19th, 1999, "The new enzyme kinetics"
2. University of Oxford, CABDyN Complexity Centre, CABDyN Seminars, November 11th, 2003, "An agent-based model simulation to discover the kinetic properties of biochemical reactions in *in vivo* conditions"
3. Indiana University, Biocomplexity Institute, Biocomplexity Seminars, September 7th, 2004, "Uses and abuses of the pseudo-first order kinetics in single molecular enzymology"
4. Indiana University, School of Library and Informatics Science, Network and Complex Systems Seminars, November, 15th, 2004, "Unraveling the biochemical reaction kinetics from time-series data".
5. Indiana University, Institute for Scientific Computing and Applied Mathematics, September 6th, 2006, "A century of enzyme kinetics: On how scaling has been used in chemical kinetics"
6. University of Michigan Medical School, Center for Computational Medicine & Biology, Tools & Technology Seminars, June 5th, 2008, "XPP/AUTO: A tool for solving differential equations in computational biology"
7. University of Michigan, Department of Mathematics, Mathematical Biology Seminars, January 19th, 2009, "Model of the Unfolded Protein Response - Pancreatic β- cell as a case study"
8. University of Michigan Medical School, Center for Computational Medicine & Bioinformatics, November 10th, 2010, "Models of beta-cell turnover during development"
9. University of Michigan, Quantitative Biology Seminars, March 12th, 2012, "Computational modeling of cell chain migration reveals mechanisms that sustain follow-the-leader behavior"
10. University of Michigan, Applied Mathematics Seminars, October 5th, 2012, "A model of chaperone overload capacity in protein folding diseases"
11. University of Michigan, Protein Folding Disease Seminars, January 9th, 2014, "Modeling protein processing and aggregation: Insulin as a case study"
12. University of Michigan, Computational Medicine & Bioinformatics Seminars, April 8th, 2015, "Investigating the effects of macromolecular crowding on reaction kinetics, protein aggregation and cell physiology"
13. Symposium on Computational Discovery in Complex Systems Biology, University of Michigan Center for Systems Biology, Center for the Study of Complex Systems, and Michigan Institute for Computational Discovery and Engineering, September 22nd, 2015, "On sex, reward or death (in flies)"

14. University of Michigan Medical School, Department of Internal Medicine, Metabolism, Endocrinology & Diabetes Division, Research Conference, November 13th, 2015, "Using mathematical and computational models to explore hypotheses in the biomedical sciences"
15. University of Michigan Biophysics Symposium, April 18th, 2016, "The long road to reproducibility requires deriving good approximations"
16. University of Michigan Medical School, Department of Computational Medicine & Biology, Tools & Technology Seminars, November 7th, 2017, "Disorder Atlas: A tool for standardizing intrinsic disorder calculations"
17. University of Notre Dame, History and Philosophy of Science Colloquium, September 29th, 2023, "Open opportunities in philosophy of biology"

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Original peer-reviewed publications

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2. **S. Schnell** and C. Mendoza (1997). Enzymological considerations for a theoretical description of the Quantitative Competitive Polymerase Chain Reaction (QC-PCR). *Journal of theoretical Biology* **184**, 433-440.
3. **S. Schnell** and C. Mendoza (1997). A closed-form solution for time-dependent enzyme kinetic. *Journal of theoretical Biology* **187**, 207-212.
4. **S. Schnell** and C. Mendoza (1997). Theoretical description for polymerase chain reaction. *Journal of theoretical Biology* **188**, 313-318.
5. **S. Schnell** and C. Mendoza (2000). A formula for integrating inverse functions. *The Mathematical Gazette* **84**, 103-104.
6. **S. Schnell** and C. Mendoza (2000). Time-dependent closed form solution for fully competitive enzyme kinetics. *Bulletin of Mathematical Biology* **62**, 321-336.
7. **S. Schnell** and P. K. Maini (2000). Clock and induction model for somitogenesis. *Developmental Dynamics* **217**, 415-420.
8. **S. Schnell** and P. K. Maini (2000). Enzyme kinetics at high enzyme concentration. *Bulletin of Mathematical Biology* **62**, 483-499.
9. **S. Schnell** and C. Mendoza (2000). Enzyme kinetics of multiple alternative substrates. *Journal of Mathematical Chemistry* **27**, 155-170.
10. J. R. Collier, D. McInerney, **S. Schnell**, P. K. Maini, D. J. Gavaghan, P. Houston and C. D. Stern (2000). A cell cycle model for somitogenesis: mathematical formulation and numerical simulation. *Journal of theoretical Biology* **207**, 305-316.
11. **S. Schnell** and C. Mendoza (2001). A fast method to estimate kinetic constants for enzyme inhibitors. *Acta Biotheoretica* **49**, 109-113.
12. **S. Schnell** and P. K. Maini (2002). Enzyme kinetics far from quasi-steady-state and equilibrium approximations. *Mathematical and Computer Modelling* **35**, 137-144.
13. **S. Schnell**, P. K. Maini, D. McInerney, D. J. Gavaghan and P. Houston (2002). Models for pattern formation in somitogenesis: a marriage of cellular and molecular biology. *Comptes Rendus Biologies* **325**, 179-189.
14. R. Baker, **S. Schnell** and P. K. Maini (2003). Formation of vertebral precursors: Past Models and Future Predictions. *Journal of Theoretical Medicine* **5**, 23-35.
15. **S. Schnell** and C. Mendoza (2004). The condition for pseudo-first-order kinetics to be valid in transient-phase studies of enzymatic reactions is independent of the initial enzyme concentration. *Biophysical Chemistry* **107**, 165-174.

16. D. McInerney, **S. Schnell**, R. E. Baker and P. K. Maini (2004). A mathematical formulation for the cell cycle model in somitogenesis: analysis, parameter constraints and numerical solutions. *Mathematical Medicine and Biology - A Journal of the IMA* **21**, 85-113.
17. **S. Schnell** and T. E. Turner (2004). Reaction kinetics in intracellular environments with macromolecular crowding: simulations and rate laws. *Progress in Biophysics and Molecular Biology* **85**, 235-260.
18. R. Hinch and **S. Schnell** (2004). Mechanism equivalence in enzyme-substrate reactions: Distributed differential delay in enzyme kinetics. *Journal of Mathematical Chemistry* **35**, 253-264.
19. E. J. Crampin, P. McSharry and **S. Schnell** (2004). Extracting biochemical reaction kinetics from time series data. *Lecture Notes in Artificial Intelligence* **3214**, 329-336.
20. **S. Schnell**, M. J. Chappell, N. D. Evans and M. R. Roussel (2006). The mechanism distinguishability problem in biochemical kinetics: The single-enzyme, single-substrate reaction as a case study. *Comptes Rendus Biologies* **329**, 51-61.[3]
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33. R. Grima and **S. Schnell** (2007). A mesoscopic simulation approach for modeling intracellular reactions. *Journal of Statistical Physics* **128**, 139-164.
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38. C. Mendoza, L. S. Rodriguez, F. Ruette and **S. Schnell** (2008). Formation of monocarboxylic acids and polyols on a graphitic surface. *Surface Science* **602**, 1053-1060.
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