Curriculum Vitae
SCOTT A. GLASGOW
December 2022

ADDRESS

Associate Professor
Department of Mathematics
Brigham Young University
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EDUCATION

1993-1995	Post-Doctoral Fellowship, Applied Mathematics, Universite Libre de Bruxelles, Brussels, Belgium
1993	Ph.D., Applied Mathematics, University of Arizona, Tucson, Arizona, USA
1988	Bachelor of Science, Physics, Brigham Young University, Provo, Utah, USA

EMPLOYMENT

8/05-Present	Associate Professor –Department of Mathematics, Brigham Young University
8/00-8/05	Assistant Professor –Department of Mathematics, Brigham Young University
8/97-8/00	Visiting Assistant Professor –Department of Mathematics, Brigham Young University
3/96-8/97	Research Associate, Mathematics Instructor –Arizona Center for Mathematical Sciences, University of Arizona
7/93-7/95	Research Associate –Department of Statistical Physics, Plasmas and Nonlinear Optics, Universite Libre de Bruxelles
8/89-5/93	Research Assistant –Optical Sciences Center, University of Arizona

Scott Glasgow

Associate Professor of Mathematics, Brigham Young University
Verified email at mathematics.byu.edu
Cited by 590 in 2021, 602 in 2022 (Google Scholar)

NSF AWARD 8/2022-7/2025

M. Ware (PI), J. Peatross (Co-PI), S. Glasgow (Senior Personnel),"Precision Measurements Using Nonlinear Thomson Scattering," 2022 Atomic, Molecular and Optical Physics. Award $449,079, Proj. ID R0112500

RECENT BYU PHYSICS TALK

"Space-Time Resolved Quantum Electrodynamics: Taking Dynamics Seriously," invitation to speak at the BYU Theoretical Physics Group, 29 March 2022, N209 ESC

PRE-PRINT

S. Glasgow, J.C. Dallon, M. Ware, Josh Newey, Samuel Moss, "Massive glueball formation from massless gluons in 1+2D," Intended for Phys. Rev. Letters (Impact IF 2022: 9.161)

DEARTMENT MENTORING AWARDS

BYU Math Department Distinguished Mentoring Award, 2018

BYU Math Department Distinguished Mentoring Award, 2015

CURRENT GRADUATE STUDENT

Josh Newey

MENTORING OUTREACH

Samuel Moss, Maple Mountain High School Student, accepted 10 Dec 22 to Cal Tech starting 9/23, received invitation 16 Dec 22 from their Institute for Quantum Information and Matter to continue his research with them on Space-Time Resolved Quantum Fields
https://iqim.caltech.edu/

CURRENT UNDERGRADUATE RESEARCH STUDENTS

William Wright, William Cvetko, Hannah Kunkel, Riley Dunnaway, DT Litster, Tim Anderson, James Hecht

PEER-REVIEWED PUBLICATIONS

1. S. Glasgow, M. Ware "Space-time-resolved quantum electrodynamics description of Compton scattering," Phys. Rev. A. **102**, 062203 (2020).
2. Glasgow S, Golden JM (2017) Dielectric Materials with Memory II: Free Energies in Non-Magnetic Materials. J At Nucl Phys 1(1):16-29
3. Glasgow S, Golden JM (2017) Dielectric Materials with Memory I: Minimum and General Free Energies. J At Nucl Phys 1(1):1-15.
4. S. Glasgow, D. Smith, L. Pritchett, J. Gardiner, M. Ware "Space-time-resolved quantum electrodynamics: A (1+1)-dimensional model," Phys. Rev. A **93**, 062106 (2016).
5. Stephen Taylor, S. Glasgow, James Taylor, Jan Vecer, "Explicit Density Approximations for Local Volatility Models Using Heat Kernel Expansions," Methodology and Computing in Applied Probability, pp.1-21, 2015.
6. S. Glasgow and M. Ware, "Optimal electromagnetic energy transmission and real-time dissipation in extended media," Optics Express, Vol. 22, Issue 4, pp. 4453-4465 (2014).
7. R. E. Wagner, Sebastian Acosta, Scott Glasgow, Q. Su, Rainer Grobe, "Quantum fluctuations in the dressed vacuum of a bosonic model system," Journal of Physics A: Mathematical and Theoretical. **45**, 275303 (2012) (21pp).
8. S. Glasgow, John Corson and Chris Verhaaren "Dispersive dielectrics and time reversal: Free energies, orthogonal spectra, and parity in dissipative media," Phys. Rev. E 82, 011115 (2010).
9. S. Glasgow and M. Ware, "Real-time dissipation of optical pulses in passive dielectrics," Phys. Rev. A. **80**, 043817-827 (2009).

10. S. Taylor and S. Glasgow, “A Novel Reduction of the Simple Asian Option and Lie-Group Invariant Solutions,” Int. J. Theoretical and Appl. Finance, **12**, Issue 6 (2009).
11. S. Glasgow, M. Meilstrup, J. Peatross, and M. Ware, "Real-time recoverable energy allocation in dispersive dielectrics," Phys. Rev. E **75**, 016616 (2007).
12. B. R. Frandsen, S. A. Glasgow, and J. B. Peatross, “Acceleration of Free Electrons in a Symmetric Evanescent Wave,” Laser Physics, **16**, No. 9, 1–4 (2006).
13. S.A. Glasgow, M.A. Agrotis and N.M. Ercolani, “An integrable reduction of inhomogeneously broadened optical equations,” Physica D: Nonlinear Phenomena, **212**, Issues 1-2, 82-99 (2005).
14. M. Ware, S. A. Glasgow, and J. Peatross, "Energy Transport in Linear Dielectrics," Opt. Express **9**, 519-532 (2001).
15. M. Ware, S. A. Glasgow, and J. Peatross, "The Role of Group Velocity in Tracking Field Energy in Linear Dielectrics,” Opt. Express **9**, 506-518 (2001).
16. S. A. Glasgow, M. Ware, and J. Peatross, "Poynting's Theorem and Luminal Energy Transport Velocity in Causal Dielectrics," Phys. Rev. E **64**, 046610-1 thru 046610-14 (2001).
17. J. Peatross, M. Ware, and S. A. Glasgow, "The Role of the Instantaneous Spectrum on Pulse Propagation in Causal Linear Dielectrics," J. Opt. Soc. of Am. A **18**, 1719-1725 (2001).
18. M. Ware, W. E. Dibble, S. A. Glasgow, and J. Peatross, "Energy Flow in Angularly Dispersive Optical Systems," J. Opt. Soc. of Am. B **18**, 839-845 (2001).
19. J. Peatross, S. A. Glasgow, and M. Ware, "Average Energy Flow of Optical Pulses in Dispersive Media," Phys. Rev. Lett. **84**, 2370-2373 (2000).
20. M. Agrotis, N. Ercolani, S.A. Glasgow, and J.V. Moloney, “Complete Integrability of the Reduced Maxwell-Bloch Equations with Permanent Dipole," Physica D **138**, 134-162 (2000).
21. T.C. Newell, A. Gavrielides, V. Kovanis, D. Sukow, T. Erneux, and S. A. Glasgow, “Unfolding of the Period-Two Bifurcation in a Fiber Laser Pumped With Two Modulation Tones,” Phys. Rev. E **56**, 7223-7231 (1997).
22. S. Glasgow, P. Meystre, M. Wilkens, "Doppleron-Catalyzed Bragg Resonances in Atom Optics," Opt. Lett. **17**,1301-1303 (1992).
23. E. Schumacher, M. Wilkens, P. Meystre, S. Glasgow, "Spontaneous Emission in the Near-Resonant Kapitza-Dirac Effect," Appl. Phys. B **54**, 451-466 (1992).
24. S. Glasgow, P. Meystre, M. Wilkens, E. M. Wright, "Theory of an Atomic Beam Splitter Based on Velocity-Tuned Resonances," Phys. Rev. A **43**, 2455-2463 (1991).

OTHER PUBLICATIONS

25. S. Glasgow, "Designer Media and Pulses for Optimally Long-Lived and Reversible Energy Storage," in *Slow and Fast Light*, OSA Technical Digest (CD) (Optical Society of America, 2011), paper SLWB3.
26. S. Glasgow, John Corson and Chris Verhaaren, “New Time Reversal Parities and Optimal Control of Dielectrics for Free Energy Manipulation,” in *Frontiers in Optics (FiO)/Laser Science (LS)* (Optical Society of America, Washington, DC, 2010), paper FThG4.
27. J. Corson, M. Ware, S. Glasgow, and J. Peatross, “Radiation Scattering by Localized Electron Wave Packets,” in *Frontiers in Optics (FiO)/Laser Science (LS)* (Optical Society of America, Washington, DC, 2010), paper JWA65.
28. S. A. Glasgow and M. Ware, "Free Energies of Dielectrics," in *Slow and Fast Light*, OSA Technical Digest (CD) (Optical Society of America, 2009), paper SMA5.
29. V. X. Dang, S. Glasgow, H. Potter and S. Taylor. "Pricing the Asian Call Option." Elec. Proc. Undergraduate Math. Days, **3** (2008), No. 3, 26 pp.
30. C. Broadbent, G. Hovhannisyan, J. Peatross, M. Clayton, S. Glasgow,” Real-time determination of free energy and losses in optical absorbing media, lanl.arXiv.org Physics e-Print archive: physics/0207117 (see also **http://theory.itp.ucsb.edu/mso/preprints/preprints02.pdf**).
31. M.A. Agrotis, N.M. Ercolani, and S.A. Glasgow, “Inhomogeneously broadened Maxwell-Bloch equations,” BULLETIN OF THE GREEK MATHEMATICAL SOCIETY, **51**, 1-14, (2006).

32. M. Agrotis, Nicholas Ercolani and Scott Glasgow , “The Pseudo-Potential Technique for Nonlinear Optical Equations,” Proceedings of 10th International Conference in MOdern GRoup Analysis (MOGRA X), 22-31, (2005).
33. C. Broadbent, G. Hovhannisyan, M. Clayton, J. Peatross, S. A. Glasgow, “Dynamical energy and loss in dispersive/dissipative dielectrics”, Chapter 9 of Focus on Lasers and Electro-Optics Research, Nova Science Publishers, (2004).
34. M. Ware, S. Glasgow and J. Peatross, “Group Delay Context for Broadband Pulses,” UWSP 6, Plenum, 1-10, (2002).
35. C. Broadbent, G. Hovhannisyan, M. Clayton, J. Peatross, and S. Glasgow, “Reversible and Irreversible Processes in Dispersive/Dissipative Media: Electro-Magnetic Free Energy and Heat Production,” UWSP 6, Plenum,131-142, (2002).
36. S. Glasgow, "Velocity-Tuned Resonances in Atomic Diffraction by a Standing-Wave Light Field," Dissertation, March 1993.

CONTRIBUTED CONFERENCE PRESENTATIONS

Scott Glasgow, M.J. Ware, “Space-Time Resolved Analysis of Electron Repulsion,” The Workshop on Super Intense Laser-Atom Physics (Toronto, Canada November 2018). http://www.fields.utoronto.ca/video-archive/2018/12/2668-20030

John Gardiner, S. Erickson, M. Wright, M. Ware, S. Glasgow, “Fermions Dressed by Massless Vector Bosons”, in *Frontiers in Optics (FiO)/Laser Science (LS) Meeting,* Tucson, Arizona, (October 2014). http://dx.doi.org/10.1364/LS.2014.LTh4I.8

S. Glasgow, “Designer Media and Pulses for Optimally Long-Lived and Reversible Energy Storage,” Slow and Fast Light Topical Meeting, Toronto, Canada, (June 2011).

S. Glasgow, John Corson and Chris Verhaaren, “New Time Reversal Parities and Optimal Control of Dielectrics for Free Energy Manipulation,” in *Frontiers in Optics (FiO)/Laser Science (LS) Meeting,* Rochester, NY, (October 2010).

J. Corson, M. Ware, S. Glasgow, and J. Peatross, “Radiation Scattering by Localized Electron Wave Packets,” in *Frontiers in Optics (FiO)/Laser Science (LS) Meeting,* Rochester, NY, (October 2010).

E. Cunningham, J. Johansen, M. Mendoza, S. Glasgow, and J. Peatross, “Bohmian Trajectories for an Electron in a Relativistic Laser Field,” Super Intense Laser-Atom Physics (SILAP), (Zion National Park, Utah, Sept. 2009).

S. Glasgow, M. Ware, “Free Energies of Dielectrics and Pulse Propagation,” Slow and Fast Light Topical Meeting, Honolulu, HI, (July 2009).

M. Agrotis, Nicholas Ercolani and Scott Glasgow, “The Lax Pair and Backlund Transformation for a Set of Nonlinear Optical Equations,” 10th International Conference in MOdern GRoup Analysis (MOGRA X), Larnaca, Cypress, (October 28, 2004).

S.A. Glasgow, J. Peatross, M. Ware, C. Broadbent, “Thermodynamics of Dispersive Media,” Frontiers in Optics/Laser Science XX, Rochester, New York, (October 12, 2004).

J. Peatross, S. Glasgow, and M. Ware, “Group Velocity and the Propagation of Broadband Pulses,” 33rd Winter Colloquium on the Physics of Quantum Electronics, (Snowbird, Utah, January 2003).

G.R. Hovhannisyan, S. Glasgow, and M. TerMikayelyan, “Error estimates for approximate solutions of systems of differential equations and applications to 2-level atoms in an external electromagnetic field,” Joint Mathematics Meetings (Baltimore, MD, January 15-18 2003).

M. Meilstrup, G. Hovhannisyan, S. Glasgow, C. Broadbent, J. Peatross, M. Clayton,” Optimal Energy Recovery in Linear Absorbing Media,“ American Physical Society’s Four Corners Section Meeting, (Oct. 2002).

C. Broadbent, J. Peatross, M. Meilstrup, G. Hovhannisyan, S. Glasgow, M. Clayton, “Separation of free energy and loss in absorbing media,” American Physical Society’s Four Corners Section Meeting, (Oct. 2002).

C. Broadbent, G. Hovhannisyan, M. Clayton, J. Peatross, and S. Glasgow, “Reversible and Irreversible Processes in Dispersive/Dissipative Media: Electro-Magnetic Free Energy and Heat Production,” UWSP 6, Plenum, pp. 131-142, (Annapolis, MD, June 2002).

M. Ware, S. Glasgow and J. Peatross, “Group Delay Context for Broadband Pulses,” in Proc. of UWSP 6, Plenum, pp. 1-10, (Annapolis, MD, June 2002).

J. Peatross, S. A. Glasgow, and M. Ware, "Group Velocity and the Exchange of Energy in Linear Dielectrics," 10th Annual International Laser Physics Workshop (Moscow, Russia, July 2001).

J. Peatross, S. A. Glasgow, and M. Ware, "A Broader Context for Group Velocity than in Traditional Pedagogy," Interdisciplinary Laser Science Conference (OSA/ILS XVI), (Providence, RI, Oct. 2000).

M. Ware, S. A. Glasgow, and J. Peatross, "Group Velocity for Wideband Pulses," Interdisciplinary Laser Science Conference (OSA/ILS XVI), (Providence, RI, Oct. 2000).

M. Ware, S. A. Glasgow, J. Peatross, "Energy Transport Velocity and the Impression of Superluminal Pulse Propagation," American Physical Society (APS), Four Corners Section, Fall Meeting (Fort Collins, Colorado, Oct. 2000).

J. Peatross, W. E. Dibble, S. A. Glasgow, and M. Ware, "Energy Propagation of Broadband Light Pulses in Dispersive Systems," Interdisciplinary Laser Science Conference (OSA/ILS XV), (Santa Clara, CA, Sept. 1999).

S. Glasgow, “The Lie Algebra Generated by Dispersion and Advection in KdV,” Utah State University’s First Workshop on Formal Geometry and Mathematical Physics (May 1999).

INVITED CONFERENCE PRESENTATIONS

S. Glasgow, L. Pritchett, A. Smith, Q. Su, “Making the case for time-resolved quantum field theoretical calculations for intense laser dynamics: why and how,” The Workshop on Super Intense Laser-Atom Physics (Suzhou China, September 2012).

J. Peatross, J. Johansen, J. Lund, S. Glasgow, M. Ware, “Bohmian Perspective on Laser Harmonic Generation: Ensemble vs. Single-Atom Emission,” The Workshop on Super Intense Laser-Atom Physics (Suzhou China, September 2012).

Q. Su, R. E. Wagner, R. Grobe, S. Glasgow, **“**Numerical studies of strong field pair creation and QFT interactions**,”** The Workshop on Super Intense Laser-Atom Physics (Suzhou China, September 2012).

J. Peatross, S. Glasgow, and M. Ware, "Single-Electron Light Scattering in an Intense Laser Focus," 16th Annual International Laser Physics Workshop (Barcelona Spain, July 2009).

S. Glasgow, J. Peatross, C. Broadbent, and M. Clayton, "Reversible and Irreversible Processes in Dispersive/Dissipative Media: Electro-Magnetic Free Energy and Heat Production," Kavli Institute for Theoretical Physics, Miniprogram on Quantum Optics (Santa Barbara, CA, July 2002). **http://online.itp.ucsb.edu/online/qo02/glasgow/**

J. Peatross, S. Glasgow, and M. Ware,"The Role of the Instantaneous Spectrum in the Behavior of Linear Dielectrics," Kavli Institute for Theoretical Physics, Miniprogram on Quantum Optics (Santa Barbara, CA, July 2002). **http://online.itp.ucsb.edu/online/qo02/peatross/**

(INVITED) COLLOQUIA AND SEMINARS

S.A. Glasgow, S. Taylor, "Večeř 's theorem and the last Lie Point Symmetry of the Asian Option PDE, Risk Seminar, Columbia University, (Jan 2009)

S. A Glasgow, "Energy transport in dispersive media," The Mathematical Biology, Computational Sciences, and Dynamical Systems Seminar, BYU, (Sep. 2004)

S. A Glasgow, "Reversible and irreversible processes in dispersive/dissipative media: electromagnetic free energy and heat production," BYU Physics Theory Group Seminar (Sep. 2002)

S. A Glasgow, G. Hovhannisyan, M. Clayton, J. Peatross, C. Broadbent, B. Webb, "Free Energy & Heat in Linear Dielectrics: Homographic Transformations of the Plane, Continued Fractions, Quadratic Forms and Lyapunov Functions," University of Arizona's Complex Systems Seminar, Dept. of Physics (Oct. 2001)

J. Peatross, S. Glasgow, M. Ware, "Group Velocity and the Exchange of Energy in Linear Dielectrics," University of Arkansas, Dept. of Physics (Nov. 2001).

J. Peatross, S. Glasgow, M. Ware, "Group Velocity and the Exchange of Energy in Linear Dielectrics," Los Alamos National Laboratory, Theory Group: Invitation by Peter Milonni (April 2001).

M. Ware, S. Glasgow, J. Peatross, "Gruppengeschwindigkeit and the Homer Simpson Effect: How Optical Pulses Propagate in Dispersive Media," BYU Physics Colloquium (Mar. 2001).

J. Peatross and S. Glasgow, "The Final Word on Group Velocity," BYU Physics Theory Group Seminar (Jan. 2000).

S. Glasgow and J. Peatross, "Getting a Grip on Faster-than-Light Phenomena," BYU Math Seminar (Sept. 1999).

PROFESSIONAL SERVICE

Referee: Journal of Elasticity, Physica D, Physical Review A, Journal of Physics A, Physics Letters A, Journal of Physics B, Journal of Optics A

PAST TEACHER TRAINING, MENTORING, AND TEACHING AWARDS

2009 Undergraduate Education Academy on Teaching and Learning participant

2006 Faculty General Education Academy on Teaching and Learning participant

Nomination for the 2006 National Society of Collegiate Scholars Faculty of the Year Award

Department of Mathematics Undergraduate Mentoring Award (2004)

University of Michigan's "Teaching Strategies Workshop," University of Arizona (1996)

GRANT APPLICATIONS AND RESEARCH OR EDUCATIONAL STIPENDS

Funded:

M. Ware (PI), S. Glasgow (Co-PI), J. Peatross (Co-PI), REU supplement to NSF 0970065 "Photoemission By Large Electron Wave Packets Emitted Out The Side of A Relativistic Laser Focus," 2010 PHY - ATOMIC & MOLECULAR PHYSICS, Program officer: Wendell Talbot Hill, $5,000. (Notification June 22, 2011)

M. Ware (PI), S. Glasgow (Co-PI), J. Peatross (Co-PI), "Photoemission By Large Electron Wave Packets Emitted Out The Side of A Relativistic Laser Focus," 2009 PHY - ATOMIC & MOLECULAR PHYSICS, Program officer: Wendell Talbot Hill, $286,350. (NSF 0970065)

M. Dorff (PI), D. Halverson (Co-PI), S. Glasgow (Senior Personnel and Proposal Co-Author), G. Lawlor (Senior Personnel), Wayne Barrett (Senior Personnel), "REU Site: Brigham Young University Research Experiences in Mathematics," 2007 NSF REU DMS-Workforce in the mathematical sciences, $369,336. Award: DMS-0755422 (This grant will run from summer 2008 to summer 2011.)

S. Glasgow, 2006 BYU Faculty General Education Academy on Teaching and Learning Professional (GE curriculum) Development grant, $1,000.

M. Dorff (PI), S. Glasgow (Co-PI), D. Halverson (Co-PI), G. Lawlor (Co-PI), "REU Site: Brigham Young University Undergraduate Research Experiences in Mathematics," 2004 NSF REU DMS-Workforce in the mathematical sciences, $160,000. (This grant ran from summer 2005 to summer 2007.)

S. Glasgow (PI), Origins of Thermodynamics, 2004 Brigham Young University Graduate Mentoring Grant Competition, $4,000.

S. Glasgow (PI), Macroscopic Energy Allocation, Transport and Thermodynamics of Dispersive/Dissipative Dielectrics, and Dispersive System Identification/Reduction," 2004 Brigham Young University Mentoring Environments Grants Competition, $14,600.

S. Glasgow (PI), Macroscopic Energy Allocation, Transport and Thermodynamics of Dispersive/Dissipative Dielectrics, and Dispersive System Identification/Reduction," 2003 Brigham Young University Mentoring Environments Grants Competition, $17,000.

S. Glasgow (PI), Integrability of Inhomogeneously Broadened Optical Bloch Equations, fall 2002 Sabbatical Leave for University of Arizona's Initiative in Nonlinear Optics, STIPEND: UofA—$2000, BYU—$1724+%100 salary.

C.Z. Ning (PI), S. Glasgow (CoPI), Tim Hansen (CoPI), Photonic Crystals, 2001 NASA Ames Education Associates Program, (for graduate student Tim Hansen) STIPEND: $5,000.

C.Z. Ning (PI), S. Glasgow (CoPI), Enhanced Photon Confinement, 2000 NASA Ames Education Associates Program, STIPEND: $10,000.

Unfunded Proposals

J. Peatross (PI), S. Bergeson (Co-PI), S. Glasgow (Co-PI), M. Ware (Co-PI), "Testing a Bohmian Prediction of Laser-Generated Even Harmonics," 2014 PHY - ATOMIC, MOLECULAR, AND OPTICAL EXPERIMENTAL PHYSICS, Program Director John Gillaspy, October 29 2014

M. Ware (PI), J. Peatross (Co-PI), S. Glasgow (Co-PI), "Photo-Emission from Individual Large Electron Wave Packets in a Strong Laser Field," 2008 PHY - ATOMIC & MOLECULAR PHYSICS, $250,933.

J. Peatross (PI), M. Ware (Co-PI), S. Glasgow (Co-PI), "Quantum Behavior of Free-Electron Photo Emission in Strong Laser Fields," Pre Proposal: 2008 SISGR Program; Research Area: Ultrafast Science

S. Glasgow (PI), "RIEMANN-HILBERT ANALYSIS OF THE ENERGETICS OF OPEN SYSTEMS," 2008 NSF DMS—Applied Mathematics, $185,037

M. Ware (PI), J. Peatross (Co-PI), S. Glasgow (Senior Personnel), "Photo-Emission from Individual Free-Electrons in a Strong Laser Field," 2007 PHY - ATOMIC & MOLECULAR PHYSICS, $390,177.

S. Glasgow (PI), Edward Kuester (Co-PI), "RIEMANN-HILBERT ANALYSIS AND THE ENERGETICS OF OPEN SYSTEMS," 2007 NSF DMS—Applied Mathematics, $526,691.

P. Bates (PI), C. Z. Ning (Co-PI), S. Glasgow (Co-PI), "Nonlinear Science," 1998 IGERT Competition.

P. Bates (PI), S. Glasgow (Co-PI), J. B. Peatross (Co-PI), "Nonlinear Optics: Integrable N-Level Atoms and Fast Simulation of Infinite-Level Atoms," 1997 NSF Applied Math Competition.

INVITED WORKSHOP

Invitation and funding to attend and speak (same title as for the UWB SP6 contribution above) at the three-week workshop in the general area of slow light, stopped light, and fast light at the Institute for Theoretical Physics, University of California at Santa Barbara, 8-26 July 2002.

MAIN COLLABORATORS WITH COMMON AREAS OF RESEARCH

Michael Ware, Brigham Young University Assistant Professor, Quantum Electrodynamics

Murrough Golden, School of Mathematical Sciences of the Dublin Institute of Technology Professor and Department Chair, Thermodynamics of Extended Dispersive Media

Qichang Su, Co-Director of the Intense Laser Physics group at Illinois State, Quantum Electrodynamics

Jan Večeř, Columbia University Statistics Associate Professor, Financial Mathematics

Edward Keuster, University of Colorado Professor, Energetics of Dissipative Media

Justin Peatross, Brigham Young University Associate Professor, Theoretical Optics

MOST RECENT GRADUATE COMMITTEES

Devin McGhie
Joshua Lytle
Duokui Yan

PAST GRADUATE STUDENTS

Devin McGhie (2016)
Dallas Smith (2016)
Nicholas DeWaal (MS Mathematics 2007)
William Evans (MS Mathematics 2007)
Tim Hansen (DNF)
Spencer Hall (MS Mathematics 2000)

PAST GRADUATE COMMITTEES

John Corson (Masters Physics 2011)
Joshua Lytle (Masters Mathematics 2011)
Duokui Yan (PhD Mathematics 2009)
William Evans (Masters Mathematics 2007)
Casey Johnson (MS Mathematics 2005)
Michael Ware (PhD Physics 2001)

PAST UNDERGRADUATE RESEARCH STUDENTS

Henry Tappen
Susie Duvall
Matthew Robinson
Himal Rathnakumara
Eric Sortomme
Ty Van den Akker
Curtis Broadbent
Cree Jones
Brigham Frandsen (**BYU FACULTY)**
Melissa Clayton
Mark Meilstrup
Sara Smoot
Joshua Hunter
Ben Webb (**BYU FACULTY)**
Rhett Lindsey
Trent J. Vandenburghe
Kurt Christensen
Harrison Potter
Aaron Smith
Vihn Dang
Maxx Cho
Jareth Holt
Artem Yankovai
James Pellegrin
Wayne Johnson
Samuel Chiu
Stephen Taylor
Jonathan Christensen
Nathan Karren
Shiul Khadka
Ryan Murray
Daniel Jensen
Danny Savory
Luke Pritchett
Natalie Siddoway
John Gardiner
Mercedes Wright
Gail Jardine
Danny Allen
Stephen Erickson
Michael Erickson
Seth Poulsen
Courtney Hearne
Jacob Paul Davis
Tyler Kharazi
Dan Addington
Kristen Funk
Natalie Coy
Reece Robertson
Timothy Keith
Ryan Scott
Isaac Jensen
Ethan Gibson
Jared Coleman
Josh Newey
Malorie Kasparian

OTHER CONTRIBUTIONS

PI for BYU Math's Special Year in Quantum Optics, CoPI John Dallon, $30k in funding for visitors and collaborations regarding this topic

BYU Math department “manager” of BYU installation of UofU Quantum Field Theory Course (taught by Carleton DeTar)

Under direction from the College of Physical and Mathematical Sciences at Brigham Young University, provided footage that became a significant part of the College’s “Enhancing Undergraduate Education at BYU” video, an external fundraising tool.

The publication “Complete Integrability of the Two-Level Atom with Permanent Dipole” inspired doctoral thesis for Maria Agrotis, student of Professor Nick Ercolani at the University of Arizona.

Helped produce Brigham Young University public service announcement using a metaphor from dynamical systems (aired on ESPN during BYU Football game).

CURRENT RESEARCH TOPICS

Time-Resolved Non-Abelian Quantum Field Theory

Electromagnetic Theory, especially as it relates to superluminal phenomena made possible by dispersion and dissipation. Also energetics of dispersive media.

Integrability: Connections between Pseudo Potentials, Lax Pairs, and Backlund Transformations

Mathematical Finance