Program

Venue:

- The Hill University Center is located on University Boulevard between 14th and 15th Street South.
- The Education Building is located between 13th and 14th Street South behind a little park on University Boulevard.
- The Marshall Center is located on 11th Street South (next to the Best Western Hotel).
- The Alys Robinson Stephens Performing Arts Center is on 10th Avenue South between 12th and 13th Street South.
- The mathematics department is on the fourth floor of Campbell Hall which is on University Boulevard between 13th and 14th Street South.

Registration: Registration will start Monday, March 25, at 7:00 PM in the Marshall Center. We will also have registration in front of the lecture hall on both Tuesday and Wednesday from 8:30 to 9:00 AM and in the Education Building on Tuesday from 1:00 to 1:30 PM. Outside these times registration will take place in the office of the mathematics department (Campbell Hall 452). The office is open from 8 AM to 5 PM. We accept checks (drawn on a US financial institution) and cash. Checks are preferred.

Plenary Talks: Plenary talks will be held in the mornings at 9:00 AM and 10:30 AM in the Auditorium of the Hill University Center.

Parallel Sessions: Parallel sessions are in the afternoons between 1:30 and 6:00 PM. All parallel sessions take place in the Education Building.

Informal Gatherings: Each night, starting on Monday, March 25, with the exception of Wednesday, March 27, there will be informal gatherings with complimentary beer, crackers and cheese. These gatherings will take place in the Marshall Center and they will start at 7:00 PM. On Thursday night (March 28) a Southern Style BBQ will be served instead of only crackers and cheese.

Reception: There will be a reception with heavy hors d'oeuvres (including wine and beer) on Wednesday, March 27, in the lobby of the Alys Robinson Stephens Performing Arts Center. During the reception, the Goodfellows will provide background jazz music. There is an extra fee of \$25 for the reception. It starts at 7:00 PM.

Monday, March 25

7:00 PM

MC Informal gathering at the Marshall Center. Registration.

Tuesday, March 26

9:00 AM

(Hill) MICHAEL AIZENMAN: Localization in Schrödinger Dynamics with Random Potentials

10:30 AM

(Hill) SVETLANA JITOMIRSKAYA: Nonperturbative localization.

1:30 PM

- 131 RAFAEL DEL RIO CASTILLO: Coexistence of spectra in rank-one perturbation problems
- **133** GANG BAO: TBA
- 145 THOMAS CHEN: Infrared renormalization and infraparticle states in QED
- **146** DAPHNE GILBERT: Spectral analysis of a class of singular differential operators
- 152 MARIA HOFFMANN-OSTENHOF: A geometrical version of Hardy's inequality

2:00 PM

- **131** RICHARD BROWN: Some recent results, applications, and open problems concerning Opial's inequality
- **133** JEAN-PIERRE FOUQUE: Time-reversal mirror techniques in the regime of separation of scales
- 145 DAVID DAMANIK: Quantum Dynamical Bounds for One-Dimensional Quasicrystals
- 146 PAVLO KROKHMAL: An approach to solving boundary-value problems of elasticity in coordinate systems with incomplete separation of variables
- **152** THOMAS HOFFMANN-OSTENHOF: Eigenvalues in Symmetry Subspaces

2:30 PM

- 131 ROBERT SIMS: Fractional Moment Methods for Finite Rank Perturbations
- **133** JEONG-ROCK YOON: On a nonlinear PDE arising in magnetic resonance electrical impedance tomography (MREIT)
- 145 RAINER HEMPEL: On the discrete spectrum of Schrödinger operators with strong magnetic fields of compact support.
- 146 IGOR TRALLE: Exact Solution of the Dirichlet Problem for Nonlinear Poisson Equation on the Plane
- 152 BERNHARD KAWOHL: Anti-eigenvalues and a conjecture of McKenna and Walter

3:00 PM

- 131 MAYUMI OHMIYA: Darboux-Lamé equation and isomonodromic deformation on the torus
- 133 LIN JI: Stiffness Identification in Biological Tissue
- 145 DIRK HUNDERTMARK: A diamagnetic inequality for semigroup differences
- 146 BONGSOO KO : Multiplicity of Unstable Nontrivial Solutions in Semilinear Elliptic Indefinite Weight Boundary Value Problems
- **152** SEMJON VUGALTER: Enchanced Binding in non-relativistic QED

4:00 PM

- **131** ANTONIO HERNANDEZ: Bifurcation of relative equilibria in symmetric Hamiltonian systems at singular momentum values
- 133 LIZABETH RACHELE: Inverse Problems for Elastic Media
- 145 HORST KNORRER: Asymmetric Fermi Surfaces for Magnetic Schrödinger Operators
- 146 YURI PODLIPENKO: Minimax approach to solving some inverse problems for Maxwell equations
- **152** ALEXANDER KOZHEVNIKOV: On a Complete Scale of Isomorphisms for Elliptic and Parabolic Pseudodifferential Boundary-Value Problems

4:30 PM

- **131** PAVEL KURASOV: Inverse scattering problem for quantum graphs
- **133** CHRIS STOLK: Constructing artifact free image families in seismic inversion
- 145 HEINZ SIEDENTOP: The Energy of Electrons in Heavy Atoms According to Jansen and Hess
- 146 IGOR POPOV: Asymptotics of bound states, bands and resonances for laterally coupled quantum waveguides and layers
- 152 IVAN VESELIC: Wegner estimate with local continuity requirements on the coupling constants

5:00 PM

- **131** ZDZISLAW TRZASKA: Chaos and the coexistence of attractors in a model system of coupled difference equations
- 133 no talk
- 145 DANIEL LENZ: Cantorspectrum for one-dimensional quasicrystals
- 146 no talk
- 152 MICHAEL HITRIK: Trace distributions and heat invariants for Schrödinger operators

5:30 PM

- 131 MIKHAIL SHCHUKIN: Homogeneous C*-algebras
- 133 no talk
- 145 SAIDAKHMAT LAKAEV: The Efimov effect of three-particle Schrödinger operators on a lattice. Asymptotics for the number of eigenvalues
- 146 no talk152 RAFAEL BENGURIA: The Lane-Emden Equation revisited

7:00 PM

MC Informal gathering at the Marshall Center.

Wednesday, March 27

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9:00 AM

(Hill) JOHANNES SJOESTRAND: Some recent progress on spectral asymptotics for non-self-adjoint operators

10:30 AM

(Hill) RICARDO WEDER: The Time-Dependent Approach to Inverse Scattering

1:30 PM

- **131** OLEG MARICHEV: The website functions.wolfram.com
- **133** ROBERT SEIRINGER: Proof of Bose-Einstein Condensation for Dilute Trapped Gases
- 145 W. DESMOND EVANS: On the Zero modes of Pauli and Dirac operators
- 146 TAALAIBEK IMANALIEV: Method of Supplementary Argument
- **152** ISABELLE CATTO: On a Dirac-Fock type models for crystals

2:00 PM

- 131 RONALD MICKENS: Analysis of a van der Pol Type Differential Equation Having a Nonpolynomial Elastic Term
- 133 MARCEL GRIESEMER: Asymptotic Completeness for Compton Scattering
- 145 EVANS HARRELL: Gap estimates for Schrödinger operators depending on curvature
- **146** ABDUNABI ABDUKARIMOV: On the Cauchy problem for first-order elliptic systems
- **152** THOMAS OSTERGAARD SORENSEN: Structure and regularity of molecular eigenfunctions and electron densities

2:30 PM

- **131** KIM TUAN VU : Paley-Wiener Theorem and Sturm-Liouville Transforms
- 133 LASZLO ERDOS: Derivation of the nonlinear Schrödinger equation with Coulomb potential
- 145 EDGARDO STOCKMEYER: The multi particle Brown-Ravenhall atom
- 146 ALEXANDER KOMECH: On attractors of nonlinear Hamiltonian equations
- 152 SOEREN FOURNAIS: The total magnetic moment of large atoms in strong magnetic fields

3:00 PM

- 131 JIANG WEI: On the Stabilizability of Systems with Control Delay Via Output Feedback
- 133 BRUNO NACHTERGAELE: From Schrödinger dynamics to the Euler equations
- 145 LOTFI HERMI: On Harrell-Stubbe Type Inequalities for the Discrete Spectrum of a Self-Adjoint Operator
- 146 MAHMADIYOR YAHSHIBOEV: Fractional integro-differentiation by Chen-Hadamard
- 152 MICHAEL PANG: An alternative proof of Pascu's theorem on hot spots

4:00 PM

- 131 IVAN AVRAMIDI: Heat Kernel Asymptotics of Zaremba Boundary Value Problem
- **133** GISELE GOLDSTEIN: The n-dimensional Heat Equation with Nonlinear Generalized Wentzel Boundary Conditions
- 145 HORST BEHNCKE: The Spectrum of Differential Operators with Almost Constant Coefficients
- 146 KONSTANTIN MAKAROV: On a Subspace Perturbation Problem
- 152 SERGUEI DENISSOV: The theory of orthogonal polynomials and spectral analysis of Schrödinger operators

4:30 PM

- **131** KETILL INGOLFSSON: Notes on the spontaneous decay
- **133** JERRY GOLDSTEIN: Instantaneous blow-up for heat equations
- 145 ANDREAS M. HINZ: Delocalization for Schrödinger operators
- 146 ALEXANDER K. MOTOVILOV: Factorization Problem for Operator-Valued Herglotz Functions: Geometric Approach
- 152 SUZANNE RIEHL: Consequences of the Connection Formulae for Sturm-Liouville Spectral Functions

5:00 PM

- **131** MARTIN JURAS: Equations in involution and intermediate integrals for a scalar second-order hyperbolic PDE in the plane
- **133** TOMIO UMEDA: Asymptotic properties of the generalized eigenfunctions of relativistic Schrödinger operators
- 145 B MALCOLM BROWN: Computing the spectrum of the one-dimensional *p*-Laplacian
- 146 VADIM KOSTRYKIN: Perturbation of Spectral Projections and the Riccati Equation
- 152 VADIM TKACHENKO: 1d periodic differential operator of order 4

5:30 PM

- **131** RATHINASAMY SAKTHIVEL: Existence Of Solutions Of Differential Equations
- **133** LUC REY-BELLET: Fluctuations of entropy production in anharmonic chains
- 145 KEVSER OZDEN KOKLU: The Asymptotic Formula For The Eigenvalues Of The Second Order Partial Differential Equation With Operator Coefficient
- 146 ABDUMALIK RAKHIMOV: On the localization of the spectral expansions of distributions
- **152** ALEXEI RYBKIN: On a new transformation of the one-dimensional Schrödinger equation and higher order WKB-type asymptotics

7:00 PM

Thursday, March 28

9:00 AM

(Hill) ARI LAPTEV: Negative spectrum of Schrödinger operators

10:30 AM

(Hill) CLAUDE-ALAIN PILLET: Spectral Theory of Open Quantum Systems

7:00 PM

MC Informal gathering at the Marshall Center.

Friday, March 29

9:00 AM

(Hill) ELLIOTT LIEB: Stability of a Model of Relativistic Quantum Electrodynamics

10:30 AM

(Hill) JOEL LEBOWITZ: Complex Time Evolution of Simple Quantum Systems

1:30 PM

- 131 C. MAEVE MCCARTHY: Torsional Waves in Functionally Graded Isotropic Elastic Rods
- **133** SUSAN FRIEDLANDER: A dyadic model for non-Newtonian fluid equations
- 145 MICHAEL SOLOMYAK: Schrödinger operator on homogeneous metric trees: spectrum in gaps
- 146 KATARZYNA SAXTON: Nonlinear balance laws in low temperature heat propagation
- 152 MICHAEL LOSS: A Bound on Binding Energies and Mass Renormalization in Models of Quantum Electrodynamics

2:00 PM

- 131 KARL MICHAEL SCHMIDT: Eigenvalue asymptotics of perturbed periodic Dirac systems in the slow-decay limit
- **133** NATASA PAVLOVIC: Finite time blow-up for a dyadic model of the Euler equations
- 145 LEONID FRIEDLANDER: On the spectrum of second order elliptic differential operators with periodic coefficients
- 146 ALMUT BURCHARD: On the Cauchy problem for a dynamical Euler's elastica
- **152** OLIVER KNILL: On a spectral notion of integrability

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MC Informal gathering at the Marshall Center.

2:30 PM

131 KYRIL TINTAREV: Concentration compactness and nonlinear subelliptic problems without compactness

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- 133 MIKHAIL VISHIK: Harmonic analysis methods for incompressible flows of an ideal fluid
- 145 PAVEL EXNER: Generalized Schrödinger operators of the graph type
- 146 BALJEET SINGH: Wave Propagation in Cracked Thermoelastic Solid Half-Space
- 152 MARCO LENCI: Large deviations for ideal quantum systems

3:00 PM

- 131 NATALIYA BANTSUR: A note on existence and stability of periodic and almost periodic solutions of quasilinear equations with "maxima"
- **133** Fedor Nazarov: TBA
- 145 VASSILIS PAPANICOLAOU: Recent Developments in the Theory of the Periodic Euler-Bernoulli Equation
- 146 MARY ANN HORN: Modelling of Nonlinear Dynamic Linked Elastic Structures
- 152 LEONID BUNIMOVICH: Walks in Rigid Environments: Continuous Limits

4:00 PM

- **131** TOSHIHIKO HOSHIRO: The maximal smoothing effect of dispersive equations
- 133 ANNA L. MAZZUCATO: The Navier-Stokes equation in distribution spaces
- **145** PETER HISLOP: Global Continuity of the Integrated Density of States
- **146** INCI ALBAYRAK: Asymptotic expression of negative eigenvalue number of an operator differential equation with even order according to small parameter having weighted function in eigenvalue
- 152 WOLFGANG SPITZER: A new proof of the Scott correction

4:30 PM

- 131 ALEXANDRA SMIRNOVA: Regularization of nonlinear ill-posed problems by dynamical system method
- **133** YURI LATUSHKIN: Spectrum of the linearized Euler operator
- 145 ROWAN KILLIP: Trace Formulae and Tri-diagonal Matrices
- 146 ABDURASUL GAZIEV: On the singular Cauchy type integrals with a continuous density for function of many variables
- **152** VITALI VOUGALTER: Pauli operator and Aharonov-Casher theorem for measure valued magnetic fields

5:00 PM

- 131 GERARD AWANOU: Spline Approximations of the 3D Navier-Stokes Equations
- **133** RADU CASCAVAL: Pulse Waves in Elastic Tubes
- 145 GEORGE HAGEDORN: A Time-Dependent Born-Oppenheimer Approximation with Exponentially Small Error Estimates
- 146 no talk
- 152 KENJI YAJIMA: Local decay for time period Schrödinger equations

5:30 PM

- 131 OLESYA ZHUPANSKA: A Singular Integral Equation with Sum-Difference Kernel Arising in Contact Problems with Friction
- 133 no talk
- 145 STEPHEN GUSTAFSON: Effective dynamics of magnetic vortices
- 146 no talk
- 152 ALINA SUZKO: Time-dependent solvable models in quantum mechanics

7:00 PM

MC Informal gathering at the Marshall Center.

Saturday, March 30

9:00 AM

(Hill) JAMES GLIMM: Predictability and Solution Error Models for Flow in Porous Media

10:30 AM

(Hill) TAI-PING LIU: Boltzmann equation and conservation laws in gas dynamics

1:30 PM

- **131** CHRISTER BENNEWITZ: Paley-Wiener methods in inverse spectral theory
- **133** GUI-QIANG CHEN: Multidimensional Transonic Shocks and Free Boundary Problems for the Euler Equations for Potential Fluids
- **145** TUNCAY AKTOSUN: Wave focusing on the line
- 146 JULIO TOLOZA: Exponentially Small Error Estimates of Quasiclassical Eigenvalues
- **152** DOMOKOS SZASZ: Local Limit Theorems and Recurrence for the Planar Lorentz Process

2:00 PM

- 131 CHRISTIAN REMLING: Inverse spectral theory for one-dimensional Schrödinger operators
- 133 HAILIANG LIU: Concentration and Cavitation of Density in Invicid Compressible Fluid Flow
- 145 MICHAEL J GRUBER: Spectral theory of Schrödinger Operators with periodic magnetic field
- 146 DANIEL UELTSCHI: On the sum of eigenvalues of the discrete Laplace operator
- **152** THOMAS MURPHY: Sequences of Classical Hard-Core Collisions

2:30 PM

- **131** AMIN BOUMENIR: Interpolation and Inverse Spectral Theory
- **133** Bo SU : Discontinuous Solutions of Hamilton-Jacobi Equations: Existence, Uniqueness and Regularity.
- 145 BORIS BELINSKIY: Stability of a general linear mechanical system with a white noise in parameters
- 146 EDUARD TSEKANOVSKII: On von Neumann's problem
- 152 PREDRAG CVITANOVIC: Hopf's last hope: Spatiotemporal chaos in terms of unstable recurrent patterns

3:00 PM

- 131 no talk
- 133 MOULAY TIDRIRI: Analysis of coupled systems of kinetic equations and conservation laws
- 145 PETER KUCHMENT: Spectra of Neumann Laplacians in thin graph like domains
- 146 RAJENDRASINH H. PARMAR: Generalized Laguerre Polynomial Solutions for Central Potentials in Quantum Mechanics
- 152 no talk

4:00 PM

- 131 ALEXANDER MAKIN: On boundary value problems for one-dimensional Schrödinger operator
- 133 KONSTANTINA TRIVISA: Systems of Conservation Laws in Continuum Physics
- 145 CARLOS VILLEGAS-BLAS: The regularization of the Kepler problem and the Bargmann Transform
- 146 NASIBA RAUPOVA: Stability of solving systems Differential Equations of special form in R2
- **152** DIMITRI GIOEV: Lower order terms in Szego type asymptotic formulas

4:30 PM

- 131 RASUL MARDIEV: Invertibility of the functional operators with shift having singularity
- **133** DAVID WAGNER: Exotherimic Reacting Euler Equations
- 145 LYONELL BOULTON: D-S projection methods for discrete Schrödinger operators
- 146 YAHYO MUHTOROV: Qualitative Analysis Of Two Dimensional System Differential Equations Of Special Form
- **152** ALEXEI IANTCHENKO: Birkhoff normal forms for Fourier integral operators

5:00 PM

- 131 no talk
- **133** ROBIN YOUNG: The *p*-system with Large Data
- 145 CHRISTIAN HAINZL: One non-relativistic particle coupled to a photon field
- 146 VAFOKUL ERGASHEV: Qualitative Analysis of Three Dimensional System Differential Equations of Special Forms.
- 152 MIKHAIL KOVALYOV: nonlinear analogues of $e^{i(kx-\omega t)}$ for integrable systems

5:30 PM

- 131 no talk
- 133 no talk
- 145 no talk
- 146 TOLIBJON BURIEV: Qualitative Analysis of Three Dimensional System Differential Equations of Special Forms
- 152 no talk

7:00 PM

MC Informal gathering at the Marshall Center.