

CLAREMONT COLLEGES MATH CLINIC PROJECTS  
1973 – Present

Note: The CGU Mathematics Clinic operates in collaboration with its counterparts at the Claremont Colleges. Some projects are based primarily at Harvey Mudd College or at Claremont McKenna College, as indicated in parenthesis below.

Fall 2011 and Spring 2012

- 253) Southern California Edison, *Optimizing Transmission of Renewable Energy (CGU)*
- 252) Los Alamos National Laboratory, *Hardware-Software Codesign (CGU)*
- 251) DYNAR (with support from CGU), *Shark Tracking Outreach Program (HMC Math/Engineering)*
- 250) E. & J. Gallo Winery, *Livingston Cooperage Optimization Model (HMC)*
- 249) Los Alamos National Laboratory, *Modeling Cooling System Alternative for LANL's Data Center (HMC Math/Engineering)*
- 248) Shell International Exploration & Production Inc., *Algorithms to Automate the Drilling Monitoring Process (HMC)*

Fall 2010 and Spring 2011

- 247) Los Alamos National Laboratory, *Optimizing Smart Power Grids (CGU)*
- 246) The Boeing Company, *Isogeometric Analysis (CGU)*
- 245) CODEE, *ODE Toolkit (HMC)*
- 244) DYNAR (with support from CGU), *Cooperative Autonomous Aquatic Vehicles: Mathematics and Robotics (HMC Math/Engineering)*
- 243) Space Systems/Loral, *Application of Robust Control to Spacecraft Attitude Stability (HMC)*

Fall 2009 and Spring 2010

- 242) Los Alamos National Laboratory, *Modeling and Simulation for Optimizing Power Grid Topologies (CGU)*
- 241) The Boeing Company (with support from NSF), *Exploration of Isogeometric Analysis (CGU)*
- 240) CareFusion, *Modeling Fluid Transport in Subcutaneous Tissue (HMC)*
- 239) Los Alamos National Laboratory, *A Multi-Criteria Optimization Model for Trade-Offs Between Services and Costs in Computer Support Services (HMC)*
- 238) Southwest Research Institute, *Application of Iterative Blind Deconvolution Algorithms (HMC)*

Fall 2008 and Spring 2009

- 237) Fair Isaac Corporation, *Credit Cohort Analysis (CGU)*
- 236) USC Information Sciences Institute, *Surface-Potential-Based Models of the Charge, Current and Capacitance in a Polysilicate-Gated MOSFET (CGU)*
- 235) The Boeing Company (with support from NSF), *Numerical Computation of Geodesics on Combined Piecewise-Smooth Surfaces (CGU)*
- 234) Cardinal Health, *Modeling Fluid Transport in Subcutaneous Tissue (HMC)*
- 233) Chicago Trading Company, *Building a Multi-Agent Artificial Stock Market (HMC)*
- 232) Citadel Investment Group, *Optimizing Pairs Trading Portfolios (HMC)*
- 231) Laserfiche, *Deblurring: Removing Image Distortion Induced by Camera Motion (HMC)*

#### Fall 2007 and Spring 2008

- 230) Fitch Ratings, *Credit Risk in a Network Economy (CGU)*
- 229) The Boeing Company (with support from NSF), *WEB-Spline Finite Elements (CGU)*
- 228) Beckman Coulter, Inc., *Modeling Bead-Based Immunoassays (HMC)*
- 227) Citadel Investment Group, *Investigating Returns to Pairs Trading Strategies (HMC)*
- 226) Laserfiche, *Automated Dewarping Algorithms for Enhancing Camera-Based Document Acquisition (HMC)*
- 225) Southwest Research Institute (SwRI), *Modeling Performance of a Jupiter-Bound Electron Sensor in Strong Magnetic Fields (Joint Math/Physics) (HMC)*
- 224) WorldQuant, LLC, *Efficient Stock Trading (HMC)*

#### Fall 2006 and Spring 2007

- 223) The Boeing Company (with support from NSF), *Finite Element Method with Weighted Extended B-Splines (CGU)*
- 222) USC Information Sciences Institute, *Gate to Base Capacitance for Nano-Scale MOSFETs (CGU)*
- 221) Beckman-Coulter, Inc., *A Modeling Tool for Optimization of Biological Assay (HMC)*
- 220) D4 Networks, *An Algorithm for Efficient Per-Seat Pricing for Air Taxi Service (HMC)*
- 219) Hewlett-Packard Laboratories, *Identifying and Minimizing Non-smoothness Issues in ICC Profiles (HMC)*

#### Fall 2005 and Spring 2006

- 218) USC Information Sciences Institute, *Quantum Corrections to Threshold Voltages for Decanano MOSFETs (CGU)*
- 217) Cardinal Health, *Control Algorithm Project (HMC)*
- 216) Hewlett-Packard Labs, *Characterization and Sources of Printer Color Instability (HMC)*
- 215) Los Alamos National Laboratory, *Mathematical and Computational Modeling of Tumor Development (HMC)*
- 214) National Renewable Energy Laboratory (NREL), *Advanced Modeling of Renewable Energy Market Dynamics (HMC)*

#### Fall 2004 and Spring 2005

- 213) Southern California Edison, *SPRAWL: Simulation of Population Redistribution Using Agglomeration, Wages and Labor (CGU)*
- 212) USC Information Sciences Institute, *Analytic Formulae for Nano-Scale Semi-Conductor Devices (CGU)*
- 211) USC Information Sciences Institute, *SOS/SOI Gate Capacitance Modeling for MOSFETs (CGU)*
- 210) Applied Biosystems, *Automated Analysis of Gene Expression Data (HMC)*
- 209) Hewlett Packard Labs, *Analyzing and Correcting Printer Drift (HMC)*

#### Fall 2003 and Spring 2004

- 208) USC Information Sciences Institute, *Gate Capacitance Modeling for the SOI MOSFETs (CGU)*
- 207) USC Information Sciences Institute, *Fundamental Issues in Modeling Semi-Conductor Behavior at High Frequencies (CGU)*
- 206) Sandia National Laboratories, *Study of a Geo-Location System (HMC)*
- 205) Los Alamos National Laboratory, *Solutions in Shallow Water Waves (HMC)*

204) Fair, Isaac & Company, Inc., *Develop a Prototype Excel Tool for Expert Decision Modeling (HMC)*

Fall 2002 and Spring 2003

203) Jet Propulsion Laboratory, *Mars Relay Network Planning Tool Optimization Algorithm Refinement (CGU)*

202) Instituto Mexicano del Petroleo, *Electric Capacitance Tomography (CGU)*

201) USC Information Sciences Institute, *Practical Semi-Analytic Model for the Substrate Current of Short Channel MOSFETs with LDDs (CGU)*

200) USC Information Sciences Institute, *Gate Capacitance Modeling (CGU)*

199) Overture Services, Inc., *Improved Relevance Ordering for Web Search (HMC)*

198) Fair, Isaac & Company, Inc., *Identification of Suspicious Investors (HMC)*

Summer 2002

197) Overture Services, Inc., *Micro-Information Units: Improving Online Search (HMC)*

Fall 2001 and Spring 2002

196) Newport Corporation, *Defect Analysis Using Depth from Focus and Defocus (CGU)*

195) USC Information Sciences Institute, *Junction Capacitance Modeling (CGU)*

194) Southern California Edison, *Power Grid Instabilities due to Wind Turbine Generators (CGU)*

193) Via Sat, Inc., *Analysis and Implementation of an Elliptic Curve Cryptography Scheme for Asymmetric Key Exchange (HMC)*

192) Space Systems/Loral, *Fuel-Optimal Low-Trust Orbit Raising (HMC)*

191) Northrop Grumman, *Multiple Sensor Analysis for Predicting Infrared Detector Noise from Spacecraft Temperature (HMC)*

190) Fair, Isaac & Company, Inc., *Optimizing Dynamic Online Surveys (HMC)*

Summer 2001

189) Southern California Edison, *Power Grid Instabilities due to Wind Turbine Generators*

188) ViaSat, Inc., *Elliptic Curve Cryptography (HMC)*

Fall 2000 and Spring 2001

187) Space Systems/Loral, *Optimization for Low-Thrust Orbit Raising (HMC)*

186) Fair, Isaac & Company, Inc., *Assessing Consumer Preferences to Aid Online Purchase Decisions (HMC)*

185) Etec Systems, An Applied Materials Company, *Methods to Improve Estimates of Effective Maximum Error for Laser Lithography Etching (HMC)*

184) Applied Biosystems, *Automatic Threshold Setting for Quantitative Polymerase Chain Reaction (HMC)*

183) USC Information Sciences Institute, *MOSFET Device Modeling (CGU)*

182) Newport, *Defect Analysis Using Depth from Focus and Defocus (CGU)*

181) Southern California Edison, *Power Grid Instabilities due to Wind Turbine Generators (CGU)*

Fall 1999 and Spring 2000

- 180) Schafer Corporation, *Chaos in the Power Grid (CGU)*
- 179) Lockheed Martin (U.S. Navy), *Find and Assess Predictive Aging Models for Hardware Applicable to the Fleet Ballistic Missile Program (CGU)*
- 178) Space Systems/Loral, *Advanced Propellant Dispersion Analysis for Orbit-Raising and Maintenance of Geo-Synchronous Satellites (HMC)*
- 177) HNC Software, Inc., *Link Analysis (HMC)*
- 176) Fair, Isaac & Company, Inc., *Preemptive Offers for Portfolio Defense (HMC)*
- 175) Momentum Data Systems, *Digital Filter Design using Hankel Norm Methods (CGU)*
- 174) USC Information Sciences Institute, *Current-Voltage Characteristic Modeling for SOI-MOSFET (CGU)*

Fall 1998 and Spring 1999

- 173) Schafer Corporation, *Chaos in the Power Grid (CGU)*
- 172) Space Systems/Loral, *Analysis System for Satellite Propellant Budget Dispersion (HMC)*
- 171) Owen Racing Shells, *Optimal Design of a Racing Shell (HMC)*
- 170) Fair, Isaac & Company, Inc., *Intelligent Techniques for Scanning and Extracting Information from Text (HMC)*
- 169) Environmental Systems Research Institute, Inc., *Edge Partitioning and the Chinese Postman Problem (HMC)*
- 168) Fair, Isaac & Company, Inc., *Recognizing Patterns in Data (HMC)*
- 167) USC Information Sciences Institute, *MOSFET Device Modeling (CGU)*

Fall 1997 and Spring 1998

- 166) Environmental Systems Research Institute, Inc., *(ESRI) Cluster Identification and Region Creation: The Beta Shape Engine (HMC)*
- 165) Bank of America, *A JavaBean for Architecture Configuration (HMC)*
- 164) Aerojet Electronic Systems Division, *Multiple Hypotheses Tracking (MHT) (HMC)*
- 163) USC Information Sciences Institute, *MOSFET Device Modeling (CGU)*
- 162) Los Alamos National Laboratory, *Adaptive Methods for Accelerating Monte Carlo Convergence (CGU)*
- 161) Beckman Coulter, *Mathematical Algorithm Component Library (CGU)*
- 160) US Navy, *Signature Classification Development System (CGU)*
- 159) Hughes Information Technology, *Reliability/Availability Modeling and Analysis (CGU)*

Fall 1996 and Spring 1997

- 158) Jet Propulsion Laboratory, *Formal Methods Applied to Spacecraft Subsystems (HMC)*
- 157) Fair, Isaac & Company, Inc., *Why Neural Net may Decline a Loan Application (HMC)*
- 156) Beckman Instruments, Inc., *Classification of Serum Protein Electrophoresis (HMC)*
- 155) Bank of America, *Java Based Library for Interactive Banking (HMC)*
- 154) Universal Music Entertainment Group (MCA), *Estimating Music Sales (CGU)*
- 153) Los Alamos National Laboratory, *Adaptive Methods for Accelerating Monte Carlo Convergence (CGU)*

Fall 1995 and Spring 1996

- 152) Eaton Corporation, *Strategic Forecast for the Powertrain Market (HMC)*
- 151) Golder Federal Services, *A Transport Pathways Algorithm for the Repository Integration Program (HMC)*
- 150) Environmental Systems Research Institute, *Algorithm Development for Geographic Information Systems (HMC)*
- 149) 3-COM, *Dynamic Optimal Inventory for Finished Goods (HMC)*
- 148) Naval Health Research Center, *Dynamic Aggregation of Symptom Data (CGU)*
- 147) Chevron Petroleum Technology Company, *Hybrid Monte Carlo Methods Applied to Oil Well Logging Problems (CGU)*

Fall 1994 and Spring 1995

- 146) Lockheed Missile and Space Corporation, *Propellant Safety and Impact Detonation (CGU)*
- 145) Northrop Grumman B-2 Division, *Electromagnetic Properties of and Propagation of Electromagnetic Fields within Sphere and Finite Wire Mediums (HMC)*
- 144) Beckman Instruments, *Simulation of DNA Array Hybridization (HMC)*
- 143) Allied Signal Automotive, *Optimization of Blade Thickness Distribution for Turbocharger Wheel (HMC)*
- 142) Naval Health Research Center, *Dynamic Aggregation of Symptom Data (CGU)*
- 141) Hughes Aircraft Company, *Systems Engineering Optimization Problems (CGU)*
- 140) Chevron Petroleum Technology Company, *Hybrid Monte Carlo Methods Applied to Oil Well Logging Problems (CGU)*

Fall 1993 and Spring 1994

- 139) Beckman Instruments, Inc., *Graphical Representation of DNA Hybridization (HMC)*
- 138) HSC Software, *A Self-Contained Design Environment for Creating Images with Ultra-High Realism (HMC)*
- 137) Allied Signal Automotive, *Radial Wheel Thickness Optimization (HMC)*
- 136) Argonaut Insurance, *Worker's Compensation Cost Differentials (HMC)*
- 135) Chevron Petroleum Technology Company, *Improved Monte Carlo Techniques to Analyze Oil Well Logging Problems with Nuclear Sondes (CGU)*
- 134) USC Information Sciences Institute, *Analysis and Numerical Analysis of Silicon-on-Insulator Transistor Device (CGU)*

Fall 1992 and Spring 1993

- 133) Lockheed (CMC)
- 132) Jet Propulsion Laboratory, *HyLite Hyper Media Library Tech (HMC)*
- 131) USC Information Sciences Institute, *Modeling of Short Channel MOSFET Devices for Use in VLSI Simulations (CGU)*
- 130) Hughes Aircraft Company, *Genetic Algorithms (CGU)*

Fall 1991 and Spring 1992

- 129) Lockheed Corporation, *Missile and Space Division: Fault-Tree Enhancement (CGU)*
- 128) Naval Health Research Center, *Sizing an Artificial Neural Network (CGU)*
- 127) USC Information Sciences Institute, *Modeling of Short Channel MOSFET Devices for Use in VLSI*

*Simulations (CGU)*

- 126) Jet Propulsion Laboratory, *Knowledge Driven Hypermedia: An Encyclopedia of Software Components (HMC)*
- 125) Chevron Oil Research, *Three-dimensional Seismic Image Data Compression (HMC)*
- 124) Northrop Corporation, *Maximizing Energy Attenuation in Coated Wave-Guides (HMC)*

Fall 1990 and Spring 1991

- 123) Harvey Mudd College, *Instructional Module on Chaos (HMC)*
- 122) Hughes Simulations Systems, *Automated Database Generation (HMC)*
- 121) McDonnell Douglas, *Low Altitude Proton Currents due to Solar Cycles (HMC)*
- 120) Teledyne Microelectronics, *Statistical Process Control in Microelectronics (HMC)*
- 119) The Rand Corporation, *Chaos in Combat Models (HMC)*
- 118) Lockheed, *Fault-tree Modeling for Nuclear Safety (CGU)*
- 117) Hughes (HAMI, Mississippi), *Modeling Production Flows (CGU)*
- 116) USC Information Sciences Institute, *Heat Transfer from a Transistor Chip (CGU)*

Fall 1989 and Spring 1990

- 115) Lockheed, *Reliability Estimation Procedures (CGU)*
- 114) Teledyne Microelectronics, *Statistical Process Control (HMC)*
- 113) The Rand Corporation, *Theory of Chaos Applied to Combat Models (HMC)*
- 112) Northrop B-2 Division, *Electromagnetic Energy Inter-action with Waveguides (HMC)*
- 111) McDonnell Douglas, *Lower Van Allen Belt Energy Distribution (HMC)*
- 110) Jet Propulsion Laboratory, *Optimality Criteria and Exact Experimental Designs for Regression Models (CGU)*
- 109) USC Information Science Institute, *Heat Transfer in Transistor Lines (CGU)*
- 108) Jet Propulsion Laboratory, *Statistical Analysis for Software Development Metrics (CGU)*
- 107) Jet Propulsion Laboratory, *Robust Experimental Design (CGU)*

Fall 1988 and Spring 1989

- 106) Jet Propulsion Laboratory, *Experimental Design for Linear and Non-Linear Parameter Estimation (CGU)*
- 105) Jet Propulsion Laboratory, *Correlation Figure of Merit Effectiveness Study (CGU)*
- 104) U.S. Forest Service, *Statistical Analysis of Indices for the Evaluation of Forest Fire Potential (CGU)*
- 103) General Dynamics, *Modeling and Simulation of Neural Network Image Classifiers (HMC)*
- 102) NASA/Dryden, *In-Flight Aeroelastic Stability Parameter Estimation (HMC)*
- 101) Teledyne Microelectronics, *Establishment of a Basic Statistical Process Control Program (HMC)*
- 100) Northrop, *An Investigation of Reflection: Transmission and Absorption of Electromagnetic energy (HMC)*
- 99) Aerospace Corporation, *Construction of Data Base for Satellite Design (HMC)*

Fall 1987 and Spring 1988

- 98) Aerojet ElectroSystems, *Predictive Models for Out-gassing Rates of Organic Materials (HMC)*
- 97) NASA/Dryden, *Flutter Stability of Aircraft in Flight (HMC)*
- 96) General Dynamics, *Modeling and Analyzing Naval Search and Track Radar (CGU)*
- 95) General Dynamics, *Modeling and Simulation of Neural Network Image Classifiers (HMC)*
- 94) Jet Propulsion Laboratory, *Mathematical Analysis of Parameter Extraction from a Non-linear MOSFET Model (CGU)*

93) Jet Propulsion Laboratory, *Benchmarking Time Warp Synchronization Mechanism (HMC)*

Fall 1986 and Spring 1987

- 92) General Dynamics (II), *Development of a Code Analyzer for Real Time Software (HMC)*  
91) General Dynamics (I), *Mathematical Modeling and Simulation of Neural Network Image Classifier (HMC)*  
90) Rand Corporation, *Optimal Strategies for a Regional Defense (HMC)*  
89) Jet Propulsion Laboratory, *Identification and Targeting of Military Units in the Battlefield (CGU)*  
88) Jet Propulsion Laboratory, *Prediction of Contact Yields for MOSFETs (CGU)*  
87) U.S. Forest Service, *The Influence of Multiple Fires on Suppression Effectiveness in California (CGU)*

Fall 1985 and Spring 1986

- 86) Garrett Automotive Products Co., *Mathematical Modeling of Floating Ring Bearings in High Speed Rotating Machinery (HMC)*  
85) System Development Corporation, *Multispectral Classifier (HMC)*  
84) Honeywell, Inc., *Generating Realistic Video Displays by Manipulating Photographic Images (HMC)*  
83) Perkin-Elmer, Inc., *Optimization of the Use of Mass Spectral Data (CGU)*  
82) Jet Propulsion Laboratory, *Target Location Estimation Assuming Sensor Error (CGU)*  
81) Jet Propulsion Laboratory, *The Modeling of Short Channel MOSFETs for Use in VLSI (CGU)*

Fall 1984 and Spring 1985

- 80) NASA/Dryden Flight Research Center, *Three Dimensional Computer Graphic Display of the Dryden Valley (HMC)*  
79) General Dynamics, *Radar Design Using Symbolic Manipulation Software (HMC)*  
78) Honeywell, Inc., *Mathematical Foundations of Realistic Video Simulations (HMC)*  
77) Pacific Bell, *Telephone Database Management System (HMC)*  
76) Perkin-Elmer, Inc., *Optimization of the Use of Mass Spectral Data (CGU)*  
75) Jet Propulsion Laboratory, *Application of Correlation Techniques for Pattern Recognition (CGU)*  
74) Jet Propulsion Laboratory, *Parameter Extraction and Transistor Models (CGU)*

Fall 1983 and Spring 1984

- 73) NASA Ames Research Center, *Depiction of Simultaneous Maneuvering of Two Moving Aircraft (HMC)*  
72) General Dynamics, *Electromagnetic Propulsion (HMC)*  
71) Teledyne Microelectronics, *Computerized Transient Thermal Analysis of Hybrid Circuits (CGU)*  
70) NASA-/Ames Research Center, *Depiction of Simultaneous Maneuvering of Two Moving Aircraft (HMC)*  
69) ITT Barton, *Analysis of a Vibrating Element Densitometer (CGU)*  
68) U.S. Forest Service Fire Laboratory, *Modeling Heat and Moisture Transfer for Prescribed Fire in Southern California (CGU)*  
67) Jet Propulsion Laboratory, *Applications of Correlation Techniques I (CGU)*

Fall 1982 and Spring 1983

- 66) ITT Barton, *Vibrating Element Densitometer (CGU)*  
65) U.S. Forest Service Fire Laboratory, *Soil Heating Beneath Prescribed Burns (CGU)*  
64) Texas Instruments, *Automatic Pitch Determination for Human Speech (HMC)*

63) Teledyne Microelectronics, *Computerized Transient Thermal Analysis of Hybrid Circuits (HMC)*

Fall 1981 and Spring 1982

- 62) Lockheed/California, *Computational Aerodynamics (CGU)*
- 61) Interstate Electronics, *Automatic Word Recognition (CGU)*
- 60) ARCO Gas & Oil, *Evaluation of Numerical Dispersion and Grid Orientation Effects for the Two-Phase Immiscible Displacement Problem (HMC)*
- 59) General Dynamics, *Forecasting and Planning for Research and Development (HMC)*
- 58) Texas Instruments, *Synthetic Speech Listener (HMC)*
- 57) U.S. Forest Service Fire Laboratory, *Network Analysis of Fire Management (CGU)*
- 56) U.S. Forest Service Fire Laboratory, *Forest Fire Suppression (CGU)*

Fall 1980 and Spring 1981

- 55) Claremont University Consortium, *Physical Plant, Accounting and Scheduling (HMC)*
- 54) General Dynamics, *Modeling, Forecasting and Planning for Research and Development (CGU)*
- 53) General Dynamics, *Homing Guidance Optimization (CGU)*
- 52) Lockheed/California, *Computational Aerodynamics: Large Linear System Iteration (CGU)*
- 51) Interstate Electronics, *Automatic Word Recognition (CGU)*
- 50) Department of Energy, *Nuclear Safety Code (CGU)*
- 49) Claremont Graduate School/Claremont University Center, *Facilities Management Model (CGU)*
- 48) Rand Corporation, *Analysis of a Passive Communications Satellite (HMC)*
- 47) Megatek, *Color Presentation Transparencies (HMC)*

Fall 1979 and Spring 1980

- 46) General Dynamics, *Compiler Development (HMC)*
- 45) Department of Energy/Atoms International, *Evaluation of Nuclear Safety Code Efficiency Schemes (CGU)*
- 44) General Dynamics, *Parameter Optimization for a Homing Guidance System (CGU)*
- 43) U.S. Forest Service Fire Laboratory, *Strategies for Chaparral Management (HMC)*
- 42) Interstate Electronics, *Automatic Word Recognition (CGU)*
- 41) U.S. Forest Service Fire Laboratory, *Probability Distributions for Fire Occurrence (CGU)*
- 40) Rand Corporation, *The Bomber Pre-launch Survival Problem (HMC)*
- 39) Aerospace Corporation, *Multivariable Interpolation for Aerodynamic Problems (HMC)*
- 38) Dean Tanenbaum, Harvey Mudd College, *Cause Computer Net (HMC)*

Fall 1978 and Spring 1979

- 37) Office of Naval Research, *Simulation, Confidence Bounds, and Goodness-of-Fit for the Mixed Exponential Distribution (CMC/IDS)*
- 36) Harvey Mudd College Office of Business Affairs, *Cash Flow Management in the Small, Private College Environment (HMC)*
- 35) General Dynamics, *Parameter Optimization for a Homing Guidance System (CGU)*
- 34) Interstate Electronics, *Automatic Word Recognition (CGU)*
- 33) Chevron Oil Field Research Company, *Parameter Studies for a Model of Abnormal Fluid Pressure (HMC)*
- 32) U.S. Forest Service Fire Laboratory, *Probability Analyses of the Cost of Fire (HMC)*
- 31) Aerospace Corporation, *Efficient Numerical Methods for Solving Differential Equations of Rocket Flight (HMC)*



- 30) General Dynamics, *Team Games: Cooperative Effects (CGU)*
- 29) U.S. Forest Service Fire Laboratory, *Computer Algorithms for the Comparison of Chaparral Land Management Alternatives (CGU)*

Fall 1977 and Spring 1978

- 28) TRASANA, *Multivariate Data Analysis (CMC/IDS)*
- 27) General Dynamics, *On Carbon Dioxide Concentrations in Lower Troposphere (CGU)*
- 26) Pomona Valley Municipal Water District, *Groundwater Nitrate Concentrations (HMC)*
- 25) Chevron Oil Field Research Company, *Modeling Abnormal Fluid Pressures (HMC)*
- 24) Jet Propulsion Laboratory, *Cal Tech President's Fund Search for Extraterrestrial Intelligence: Computing Techniques (HMC/CGU)*
- 23) Honeywell Marine Systems, *Digital Feedback Control of Targeting Devices (CGU)*
- 22) U.S. Forest Service Fire Laboratory, *A Study of Strategies for Fire Control and Prevention (CGU)*

Fall 1976 and Spring 1977

- 21) Chevron Oil Research Company, *A Mathematical Modeling of Compacting Sediment with Diagenesis (HMC)*
- 20) No-Client Project, *The No-Client Project (CGU)*
- 19) Office of Naval Research, *Behavior of Certain Maximum Likelihood Estimators from Large Randomly Sensored Samples (CGU)*
- 18) Chevron Oil Field Research Company, *Models of Abnormally High Pressures (CGU)*
- 17) California State Architect's Office, *Life Cycle Costing (CGU)*
- 16) General Dynamics, *Description of Atmospheric CO<sub>2</sub> Concentration with Application to Sensor Systems (CGU)*
- 15) Atomics International, *Fuel Element Life Performance Model (CGU)*
- 14) Pomona Valley Municipal District, *Predicting Ground-water Nitrate Concentrations (HMC)*
- 13) Jet Propulsion Laboratory, *Design of a General Purpose Photo Composition System (HMC)*

Fall 1975 and Spring 1976

- 12) Office of Naval Research, *Approximate Confidence Bounds for Highly Reliable Coherent Systems (CGU)*
- 11) Ameron, Inc., *Computerized Coatings Formulator (CGU)*
- 10) Atomics International, *Fuel Pin Performance Model (CGU)*
- 9) Chevron Oil Field Research Company, *A Consolidation Model for Predicting Abnormal Fluid Pressures in Sedimentary Basins (CGU)*
- 8) Becton, Dickenson & Company, *Annual Planning Forecasts (HMC)*
- 7) Honeywell, Inc., *Development of Trainer Display Program (CGU)*

Fall 1974 and Spring 1975

- 6) Environmental Protection Agency, *Correlation of Federal Test Procedures to Short Tests for Emissions (CGU)*
- 5) Rockwell International Science Center, *Mathematical Modeling of Air Pollution Transport (CGU)*
- 4) Los Angeles Superior Court, *Juror Utilization Problems (CGU)*
- 3) Chevron Oil Field Research Company, *Models for Abnormally High Fluid Pressures (CGU)*
- 2) Northrop Corporation, *A Kinematic Handbook for Missile Design (CGU)*

Fall 1973 and Spring 1974

1) Bell and Howell, *Analysis of Scintillation Phenomena in Rear Screen Projectors (CGU)*