Last Name	First Name	Home Dept.	Dept. website	Quad Chart Bullets	Quad Chart with Graphics	
Achuthan	Ajit	MAE	http://www.clarkson.edu/people/ajit-achuthan	•Computational simulation of Additive Manufacturing Processes of metals and alloys to determine residual stresses •Constitutive modeling of materials at microstructural length scale •Mechanical testing of materials at micro- and macroscopic length scales •In-situ characterization of the mechanical deformation at microstructural length scale •Multiscale finite element analysis of structures		
Ahmadi	Goodarz	MAE	http:www.clarkson.edu/people/goodarz-ahmadi	•Particle transport, adhesion & removal •Multiphase mixtures and slurry flows •Aerosol transport and deposition •Microcontamination control •Computational fluid dynamics •Suspension rheology •Flows through fractured and porous media •Respiratory flows and transport •Turbulent flow and dispersion modeling •Vibration and flow control		
Aidun	Daryush	MAE	www.clarkson.edu/people/daryush-aidun	•Weldability of Dissimilar Materials •Weld Process Modelling & Characterization •Wire Arc Additive Manufacturing of Dual Phase Alloys •Weld Residual Strain-Stress/Distortion Analysis •Corrosion & Mechanical Properties of Dissimilar Metals Weld		
Almeida	Bethany	CBE	www.clarkson.edu/people/Bethany-almeida	• Biomaterials fabrication and characterization •Hydrogels •Nanoparticles (liposomes, polymerosomes, metallic nanoparticles, quantum dots) •Biofunctionalized surfaces •Polymeric scaffolds •Human mesenchymal stem cells •Fluorescence microscopy/live cell imaging •Cell-based assays/molecular biology •In vitro cell-biomaterial models		
Andreescu	Silvana	CBS	http://www.clarkson.edu/people/silvana-andreescu	•Biosensors •Biomolecular recognition at nanoscale materials •Surface functionalization •Biomimetic materials •Single-molecule electrochemistry •Microelectrode technology •Hydrogel formulation and printing •Portable nanoparticle-based sensors •Printable paper-based technologies for water sensing and filtration		
Athavale	Prashant	Mathematics	www.clarkson.edu/people/Prashant-athavale	Expertise •Image processing with Partial Differential Equations and Calculus of Variations •Restoration of Electron Backscatter Diffusion (EBSD) data using Vector Valued Total Variation (TV) flow •Statistical analysis of COVID-19 pandemic data •Machine learning based image processing •Analysis of STEM-Ed related datasets		
Baki	Abul Basar	CEE	http://www.clarkson.edu/people/abul-basar-baki	•Ecohydraulics for healthy water solutions •Urban hydraulics to enhance Ecological Functioning •Stream Restoration and Enhancement •Sustainable and Resilient Water Infrastructure due to Climate Change •Sustainable Hydropower Development •Water Quality and Sediment Transport, •Data analytics and GIS Techniques for Shoreline/River bank Erosion		
Banavar	Mahesh	ECE	http://www.clarkson.edu/people/mahesh-banavar	•Signal Processing •Machine learning •Inference •Localization •Sensor networks •Continuous Authentication •Interface areas such as bias mitigation in machine learning, explainable AI, behavioral biometrics, localization, detection and estimation •STEM Education and Outreach		
Banerjee	Natasha	CS	www.clarkson.edu/people/Natasha-banerjee	•Computer Vision •Computer Graphics •Computational Fabrication •Human-Aware Collaborative Robotics •Novel Computational Concepts in Additive Manufacturing (AM) •Augmented/Virtual Reality (AR/VR) •Multi-Modal Sensing •Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning (DL)		
Banerjee	Sean	CS	www.clarkson.edu/people/sean-banerjee	•Artificial Intelligence (AI), Machine Learning, Deep Learning •Multi-modal Sensing Systems •Human-Computer Interaction •Virtual Reality •Empirical Methods •Computational Fabrication •Programmatic and Modular Methods for Additive Manufacturing		
Bazzocchi	Michael	MAE	www.clarkson.edu/people/michael-bazzocchi	•Asteroid science and engineering •Orbital dynamics and control •Mission and systems design •Satellites, formations, and space debris •Space Robotics •Terrestrial Robotics •Industrial Robotics •Personal and Assistive Robotics		
Bollt	Erik	ECE	www.clarkson.edu/people/erik-bollt	•Data-driven analysis of complex systems and dynamical systems •Stochastic Processes •Network science •Machine learning and data science •Causation inference •Information theory •Applications: engineering, science, social and behavioral science, oceanography and Earth science, physiology , medicine, aeronautical, image processing, bioinformatics, network neuroscience		
Brown	Ryan	CBS	https://www.clarkson.edu/people/ryan-brown	Material Growth and Supramolecular Assembly at the Gas/Solid Interface. Methodology: Scanning Tunneling Microscopy • Molecular and atomic resolution imaging • Information obtained: topography, electronic structure Instruments for Characterization in Lab • UHV-LT STM for high resolution scanning and measurements • Home-built microscope • RHK R9-plus electronics • ARS-Cryo cryocooler for LT operation (<77 K) • Ambient Pressure STM • Home-built microscope with ambient environmental control • RHK R9-plus electronics • Hiden Analytical mass spectrometer (up to 200 amu)		
Cetinkaya	Cetin	MAE	www.clarkson.edu/people/cetin-cetinkaya	•Ultrasonic elastic wave propagation •Acoustic metamaterials •Real-time process monitoring of additive manufacturing processes and materials •Nano/micro-particle adhesion, removal and motion •Pharmaceutical materials characterization and manufacturing monitoring •Laser ultrasound •Large-scale wave propagation simulations		
Colak	Arzu	Phy	www.clarkson.edu/people/arzu-colak	•Atomic Force Microscopy (AFM) •Single molecule force spectroscopy (SMFS) •Chemical mechanical planarization •Nanotribology of 2D materials •Industrial lubricants, solid lubrication •Mechanical characterization of nanocrystals •Mechanical characterization of hydrogels •Mechanobiology		

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Crimi	Michelle	CEE	www.clarkson.edu/people/michelle-crimi	•Development of technologies to treat contaminated groundwater •Treatment of per- and polyfluoroalkyl substances (PFAS) and other emerging contaminants •Impacts of treatment on groundwater quality •Integrating treatment technologies for optimized risk reduction •Chemical oxidation •Sonolysis		
Crouse	David	ECE	www.clarkson.edu/people/david-crouse .	•Metamaterials •Photonic crystals •Plasmonic structures •Nanotechnology •Semiconductor devices •Optoelectronics and Photonics •Electromagnetic/optical modeling •Device fabrication process development -- Founding Director NSF Industry/University Cooperative Research Center for Metamaterials (CfM) -- Founder of Phoebus Optoelectronics --Industry expertise at Intel		
Dhaniyala	Suresh	MAE	www.clarkson.edu/people/suresh-dhaniyala	•Aerosol Science and Engineering •Bioaerosol sampling and characterization •HVAC design and optimization •Air filtration •Computational fluid dynamics (CFD) •Indoor air quality •Ambient air quality •Atmospheric aerosol physics •Sensor development •Mesh-network sensor deployment •Big data and data analytics		
Erath	Byron	MAE	www.clarkson.edu/people/byron-erath	•Fluid-structure interactions •Experimental fluid flow measurements (PIV, Tomographic PIV) •Small-scale energy harvesting •Vortex dynamics •Acoustics •Voiced speech production		
Fernando	Sujan	CEE	http://www.clarkson.edu/people/sujan-fernando	•Analytical and Environmental Chemistry •Analysis of legacy and novel contaminants in the environment •Multidimensional Chromatography and High Resolution Mass Spectrometry •GC-MS and LC-MS analysis of organics •ICP-MS analysis of metals and elements		
Ferro	Andrea	CEE	http://www.clarkson.edu/people/andrea-ferro	•Indoor air quality •Aerosol inhalation exposure analysis •Fate and transport of pollutants in the built environment •Resuspension of particulate matter Licensure and other roles: •Registered Professional Engineer (MA) •Associate Director for Research, Institute for a Sustainable Environment •President, American Association for Aerosol Research (AAAR) 2019-2020		
Gracheva	Maria	Physics	www.clarkson.edu/people/maria-gracheva .	**Expertise in Computer Simulations:** •Biomolecular detection and filtering •Filtering of nanoparticles/proteins/ions •Brownian dynamics of DNA/polymers •Semiconductor device modeling for biomolecule characterization •Nanopore-based electronic devices •Cell biomechanics/signaling National Science Foundation (NSF) Career Award: Coupling nanoscale device modeling with coarse-grained biomolecular simulations•		
Helenbrook	Brian	MAE	www.clarkson.edu/people/brian-helenbrook	•Thermal & fluid dynamics •Two-phase flows •Wind turbines •Solidification •Coating flows •Computational modeling •High performance computing •Reduced order modeling •Finite element methods		
Holsen	Thomas	CEE	http://www.clarkson.edu/people/thomas-holsen	•Fate and transport of pollutants in the environment •Physical/chemical water treatment •Emerging contaminants •Analytical organic chemistry •Environmental chemistry •Per- and polyfluoroalkyl substances (PFAS) •High resolution mass spectroscopy to identify unknown contaminants		
Imtiaz	Masudul	ECE	www.clarkson.edu/people/masudul-imtiaz	•Wearable sensor Development •Embedded system •Machine vision •Robotics •Electronic Circuit Development •Biomedical signal processing •Machine learning •Deep learning •Embedded computing in health care application		
Katz	Evgeny	CBS	http://www.clarkson.edu/people/evgeny-katz	•Bioelectronics •Bionanotechnology •Biosensors •Biofuel cells •Biomolecule Computing •Bioelectrochemistry •"Smart' Signal-Controlled Materials •Signal-Control Molecule Release •Biomolecule Modified Electrodes •Implantable Bioelectronic Devices		
Kim	Taeyoung	CBE	www.clarkson.edu/people/taeyoung-kim	•Electrochemical separations •Water desalination •Solar desalination •Water softening •Nutrient removal/recovery from wastewater •Redox-active materials for water and energy applications •Energy harvesting from alternative energy sources such as waste heat, CO2 in stack gas, and salinity gradients		
Krishnan	Sitaraman	CBE	http://www.clarkson.edu/people/sitaraman-krishnan	•Synthesis, processing and mechanical property characterization of polymeric materials •Molecular-scale engineering of surfaces and thin films using polymers •Synthesis of new functional materials •Advanced materials for HPHT coatings and elastomers, biocompatible surfaces, chemical mechanical polishing, fuel cells, lithium ion batteries, and controlled release •Emulsions and emulsion polymers •Molecular modeling, and property predictions		
Kuxhaus	Laurel	MAE	www.clarkson.edu/people/laurel-kuxhaus	•Bone fracture characterization •Ex-vivo musculoskeletal injury models •Injury biomechanics •Soft tissue injury •Medical devices for long bone fracture repair •Assistive technology design •Biomedical engineering education •Science & technology policy		

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Langen	Tom	Bio	www.clarkson.edu/people/tom-langen	•Impact of roads on wildlife and the environment •Environmental effects of dams •Wetland restoration •Habitat management and conservation of threatened species •Environmental impact assessment		
Leung	Ka Ho	CBS	https://www.clarkson.edu/people/ka-ho-leung	•Sensor development for specific cellular organelles •Nucleic acid-based molecular devices •Organelle-specific targeting •Subcellular imaging •Diagnosis and therapeutic efficacy evaluation •Cell physiology study		
Liang	Chunlei	MAE	www.clarkson.edu/people/chunlei-liang	•Computational Fluid Dynamics •Fluid-Structure Interaction •Computational Magnetohydrodynamics •Massively Parallel Computation •Turbulent Flows around Marine Propellers and Heat Exchanger Tube Bundles •Turbulence in Vegetated River and Flood Control •Transitional Flows in Human Heart and Arteries		
Liguori	Simona	CBE	www.clarkson.edu/people/simona-liguori	•Blue hydrogen production from renewable sources or natural gas in membrane reactor •Gas separation •Metallic membrane synthesis and characterization •Decentralized ammonia synthesis at low pressure •Process intensification •Negative emissions technology – CO2 removal from air by carbonation		
Lu	Xiaocun	CBS	http://www.clarkson.edu/people/xiaocun-lu	•Polymer Mechanochemistry •Mechanoresponsive Materials •Stimuli-responsive Polymers •Smart Polymeric Fluids and Non-Newtonian Fluids •Self-Healing Materials •Microcapsules and Encapsulation •Damage Detection and Sensing •Cure-on-Demand Materials •Supramolecular Self-Assembly •Supramolecular Sensing		
Lufkin	Thomas	Bio	www.clarkson.edu/people/thomas-lufkin	•Intervertebral disc (IVD) disease •Isolation of mammalian stem cells •RNA in situ hybridization ·Single cell gene expression analysis •IVD transcriptomics •Novel IVD stem cell line generation •Histology and confocal microscopy •Transgenic mice and green fluorescent protein expression •Gene targeting via homologous recombination and CRISPR-Cas		
Martinez	Marcias	MAE	www.clarkson.edu/people/marcias-martinez	•Experimental Mechanics •Smart Materials •Finite Element Methods •Stress Analysis •Fatigue and Damage Tolerance •Durability •Composite material manufacturing and characterization •Non Destructive Evaluation ·Structural Health Monitoring ·Sensing		
Mastorakos	Ioannis	MAE	www.clarkson.edu/people/ioannis-mastorakos	•Multiscale computational materials •Nanostructured multilayer metallic composites •Composite nanofoams •Composite nanowires •Crack-dislocation interactions •Grain boundary – dislocations interactions •Interfaces – dislocations interactions ·Strength and dislocation mobilities in High Entropy Alloys		
McCrum	Ian	CBE	www.clarkson.edu/people/ian-mccrum	•Electrochemistry and Electrocatalysis (fuel cells, electrolyzers, batteries) •Surface science •Atomistic-scale computational modeling •Measuring/predicting catalyst activity, selectivity, and stability •Catalyst design •Catalyst/active-material degradation, dissolution, and reconstruction		
Mededovic	Selma	CME	www.clarkson.edu/people/selma-mededovic	•Plasma-based Water Treatment •PFAS Treatment •Advanced Oxidation Processes •Plasma Reactor Design •Plasma Sterilization •Nitrogen Fixation Using Plasmas •Hydrogen Production from Liquid Fuels •Mathematical Modeling of Electrical Discharges		

Merrett	Craig	MAE	www.clarkson.edu/people/craig-merrett	•Analytical formulations of fluid-structure interactions
				  •Linear and non-linear systems
				  •Polymer composite structures
				  •Advanced aircraft configurations
				•Experimental Mechanics techniques for validation of analytical models
				  •Creep and stress relaxation rigs
				  •Photoelastic optical bench
				  •Aeroelastic wind tunnel testing
				•Material characterization studies
				·Thermodynamic effects on materials		

Paek	Eunsu	CBE	www.clarkson.edu/people/eunsu-paek	•Computational design of electrode and electrolyte materials for Li/Na-ion batteries and supercapacitors •Horizontal ribbon growth of Silicon for high-efficiency solar cells •Modeling of interfacial chemistry and ion transport, defect formation and dynamics, and chemical functionalization in nanostructural materials •New solvent/catalytic materials design for carbon capture and utilization		
Partch	Richard	CAMP	www.clarkson.edu/people/richard-partch	•Inorganic, Metallic, Organic, Polymer •Core and Core-Shell Composites •Electro, Medical, Optical Applications •Fabric-Particle Composites •Aerosol, Solution and Dispersion Reactions •Air and Water Contaminant Removal •Enhanced Metal Matrix Composites •Electronic and Lighting Applications •Particle Additive Manufacturing		
Peethamparan	Sulapha	CEE	http://www.clarkson.edu/people/sulapha-peethamparan	•Portland cement concrete •Cement free sustainable Geopolymer or alkali-activated concrete •Nontraditional natural pozzolans for concrete •Nano materials for concrete •Glass powder concrete •Recycled concrete aggregate •Chemical deterioration in concrete •Concrete durability •CO2/ NO2 sequestration in concrete •Oil well cements		
Piperni	Pat	MAE	www.clarkson.edu/people/pat-piperni	•Aircraft aerodynamic design and analysis •Aircraft conceptual design •Multidisciplinary design optimization (MDO) •Robust design •Numerical grid generation for complex configurations •Hydrodynamic analysis		

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Podlaha-Murphy	Elizabeth	CBE	www.clarkson.edu/people/elizabeth-podlaha-murphy	•Electrodeposition •Thin films, nanowires, nanostructured alloys and composites •Electrochemical detection •Heavy metals, dyes, biomolecules •Electrolysis •Treatment of nitrates, heavy metals from wastewater		
Roy	Dipankar	Phy	www.clarkson.edu/people/dipankar-roy	•Chemical mechanical planarization (CMP) and post-CMP cleaning •Electrode and electrolyte materials for lithium ion batteries •Electrochemical supercapacitors •Impedance based assessments of photovoltaic cells •Electrodeposition for microelectronic applications •Electroanalytical techniques of material characterization •Direct alcohol fuel cells		
Scrimgeour	Jan	Phy	www.clarkson.edu/people/jan-scrimgeour	•Optical Imaging and Microscopy •High Speed Particle Tracking •Single Molecule Imaging (Fluorescence) •Confocal and Light Sheet Microscopy •Understanding Physical Processes •Molecular Transport •Diffusion and Flow Visualization/Analysis •Polymer Dynamics •Target Applications •Bio-interfaces •Bio-mimetic Systems •Hyaluronan-Rich Materials/Interfaces		
Seo	Jihoon	CBE	www.clarkson.edu/people/jihoon-seo	•Chemical mechanical planarization •CMP slurry and Post-CMP cleaning •Semiconductor manufacturing process •Colloidal chemistry and electrochemistry •Particle and slurry characterization •Particle synthesis and dispersion •Particle adhesion and removal •Atomic force microscopy		
Shipp	Devon	CBS	https://www.clarkson.edu/people/devon-shipp	•Polymer synthesis & characterization •Degradable polymers & drug delivery •Novel biomaterials and hydrogels •Polymer colloids & nanoparticles •Self-healing polymers •Shape memory polymers •Polymer nanocomposites •Atom transfer radical polymerization (ATRP) •Reversible addition-fragmentation chain transfer (RAFT) polymerization		
Skufca	Joseph	Math	www.clarkson.edu/people/joseph-skufca	•Data Analytics and Machine Learning •Dynamical systems and Chaos •Complex Networks •Broad engineering background: •20 years, Nuclear Submarine Officer •Experience with applications from: •Acoustics •Biometrics •Applied Control and Optimization •Hyperspectral Signals Analysis •Power Grid Systems •Disease modeling		
Sur	Shantanu	Bio	www.clarkson.edu/people/shantanu-sur	•Biomaterials for regeneration, drug delivery, and cancer therapy •Analysis of airborne pathogens •Predictive disease modeling •*In vitro* models for biomaterials study •Cell motility and collective behavior •Molecular biology, cell assays •Fluorescence microscopy, live-cell Imaging •Real-time quantitative PCR •Next-generation sequencing		
Tan	Chee-Keong	ECE	www.clarkson.edu/people/chee-keong-tan	•Wide and ultrawide bandgap semiconductor materials •Novel electronic materials •Quantum structures •Optoelectronic and electronic device •Metamaterials design for biosensor, photonics and thermal control device •Atomistic and empirical modeling for electronic and optoelectronic properties of materials •Material epitaxial growths and characterizations		
Thomas	Robert	CEE	http://www.clarkson.edu/people/robert-thomas	**Sustainable infrastructure materials** •Alternative cements •Recycled materials •Durability & long-term performance •Mechanical properties (multi-scale) •Test methods & measurements **Experimental mechanics** •High strain rate response (e.g., impact) •Quasi-brittle fracture •Full-scale testing		
Trivedi	Dhara	Phy	www.clarkson.edu/people/dhara-trivedi	•Theoretical and Computational Physical Chemistry •Photoactive Materials •Plasmonic Materials •Advanced Material Design •Charge and Excitation Energy Transfer •Mixed Quantum Classical Dynamics •Optical Properties of Nanostructures •Nanoscale Structures: Quantum Dots, 2-Dimensional Materials, Metal Organic Frameworks		
Visser	Kenneth	MAE	www.clarkson.edu/people/kenneth-visser	•Applied Aerodynamics •Vortex Flows •Drag Reduction •Wind Turbine Design •Aircraft Design		
Vu	Tuyen	ECE	http://www.clarkson.edu/people/tuyen-wu	•Smart grid •Microgrids •Cyber-physical security for renewable energy systems •Power system dynamics •Stability and control •Energy management and optimization •Integration of energy storage systems •Renewable energy systems •Electric vehicles		
Wriedt	Mario	CBS	http://www.clarkson.edu/people/mario-wriedt	•Design and characterization of nanoporous materials •Metal-organic frameworks (MOFs) •Electrochromic and photoactive materials •Carbon capture materials •Gas / small molecule storage materials •Molecular magnetism •X-ray diffraction methods (powder and single-crystal) •Thermal methods (TGA and DSC)		
Xiao	Suguang	CEE	www.clarkson.edu/people/suguang-xiao	•Dynamic behavior of foundations for wind turbines •Soil-structure interaction of geothermal energy piles •Heat transfer simulation of bridge deicing using geothermal energy •Thermomechanical behavior of thermosyphons in permafrost •Discrete element method of clayey soils		
Yang	Yang	CEE	http://www.clarkson.edu/people/yang-yang	•Electrocatalysis and electrochemistry •Electrochemical advanced oxidation process for water treatment •Electrochemical valorization of plastic waste •Electrochemical synthesis of value-added chemicals •Electrochemical remediation technology for surface water restoration		

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Ye	Jingyun	CBS	http://www.clarkson.edu/people/jingyun-ye	•Computationally investigate catalyst structures and reaction mechanisms •Explore structure – function relationships for large-scale computational screening to guide experiments on catalysts design •Metals, metal oxides, metal complexes, zeolites, metal organic frameworks, et al., •Heterogeneous and homogeneous catalysis •Thermodynamics and kinetics •Density functional theory, molecular dynamics, wave functional theory		
Yoo	Michele	Bio	www.clarkson.edu/people/michelle-yoo	•Role of polyploidy in plant evolution and crop domestication (cotton, brassicas) •Physiological and molecular responses of plants in response to drought/salt stresses •Metabolomic profiling in plants in response to environmental stresses •Population structures of medicinal & invasive plants in New York States •Genomic/Epigenomic plasticity of aquatic plants in different environments		
Yuya	Philip	MAE	www.clarkson.edu/people/philip-yuya	•Nanoindentation •Contact resonance force microscopy •Functionalized thin nanocomposite •Viscoelastic property mapping •Microstructural characterization •Mineralized tissues e.g. bone, fish scales, and shells •Polymers and biomaterials •High entropy alloys •Polymer nanocomposites		
Zhang	Jianhua	ECE	www.clarkson.edu/people/jianhua-zhang	•Distributed cyber physical algorithms •Cyber-physical co-simulation •Cyber-physical HIL test •Smart grid communications •Monitoring and control of large-scale renewable energy system (WAMS) •Integration of renewable energy •Optimization and machine learning for DERMS •Cybersecurity of smart grid		