

Areas of Expertise

Coastal engineering

Coastal/estuarine hydraulic analysis

Areas of Expertise - Lead POC

Joan Pope
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Beach nourishment and beachfill design
Inlet and Regional Sediment Management
Innovative shore protection
Construction materials
Earth forces & geotechnical issues
Erosion control structures, functional design
Mining sediment for nourishment
Runup & overtopping analysis
Armor stability & impact force analysis
Structural design

Bruce Ebersole
CEERD-HF
Tel: 601-634-3209

Modeling, coastal/estuary hydrodynamics
Modeling, wave generation and transformation
Inlet hydrodynamics and stability
Tropical and extratropical storm waves
Tropical and extratropical storm surge
Surf zone waves and currents
Tsunamis
Wave/structure interactions
Salinity intrusion

Freshwater and saltwater diversions

Coastal/estuarine sediment and geology analysis

Jack Davis
CEERD-HV-T
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Barrier island overwash and breaching
Beach & dune erosion
Bluff erosion
Nearshore dredged material mound stability & fate
Sediment budgets
Sediment transport, non-cohesive
Sediment transport, cohesive and mixed
Fluid mud
Inlet morphology and stability
Modeling, inlet, shoreline, beach change
Modeling, mixed sediments, 2-D and 3-D
Delta building and loss
Wetland erosion
Barrier island evolution and geology

Coastal navigation

Rose Kress
CEERD-HN
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Channel alignment and stability
Channel sedimentation
Inlet and entrance channels
Jetty and breakwater design

Cold regions engineering

Port and harbor design

Kate White

CEERD-RI

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Cold regions water quality

Glaciology

Ice control structures

Ice impacts

Ice jams

Ice modeling

Ice-affected hydraulics

Ice-impacted channel restoration

Ice-impacted shoreline protection

Ice-Sediment Transport

Snow drift engineering and modeling

Snowmelt flood forecasting

Dam safety

Jeff Harris

CEIWR-HEC-HH

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Dam safety studies

Dam safety, breach analysis

Dam safety, hydrology

Dam Safety, risk analysis

Inflow design floods

Probable Maximum Flood

Dredging

Jim Clausner
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Beneficial uses of dredged material
Bypassing design & equipment
Dredged material management
Dredging process
Equipment
Modeling, dredged sediment processes

Ecosystem restoration

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Abandoned mine land remediation
Restoration Modeling/Monitoring
Dam Removal
River, Stream, and Wetlands Restoration
Hydrology for Restoration
Ecologically Sustainable Water Management
Reservoir Systems Analysis/Modeling/Management
Reservoir Re-regulation
Water Quality Analysis/Modeling
Economic Analysis/Modeling for Restoration
Interagency and NGO Coordination
Watershed Analysis/Modeling/Planning

Environmental

Meg Jonas
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Aquatic resources
Ecosystem Management Analysis
Ecosystem Management Modeling
Model Linkage-H&H/Erosion & Sediment/Ecosystem Assessment/Mngt
Riparian vegetation
Riparian zones
Threatened and Endangered Species
Watershed Assessment Tools
Watershed management
Wetlands

Geospatial

Tim Pangburn
CEERD-RT
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Bathymetry
DFIRM mapping and FEMA requirements
Digital terrain analysis
GIS-Hydraulics
GIS- Coastal
GIS-Hydrology
Inundation mapping
Mapping
Remote sensing technologies and analysis
Watershed Delineation

Groundwater hydrology

Earl Edris
CEERD-HF-H
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Sub-area

Combined surface and subsurface water modeling
Ground water investigations
Groundwater recharge
Monitoring wells
Piping and seepage
Subsurface drainage

Hydraulic design

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River engineering (channels and structures)
Hydraulic structures (gates, valves, control structures)
Conduit, culvert, and pipes
Dams
Irrigation and storm drainage design
Levees, floodwalls and retaining walls
Detention equipment
Physical modeling/micro modeling
Water distribution
Fish Passage
Pumping Stations

Hydropower

Bolyvong Tanovan

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Hydropower Feasibility studies
Hydropower FERC relicensing
Hydropower system analysis and modeling
Hydropower system operational planning
Hydropower upgrade and rehabilitation -- economic justification
Hydropower value and benefit impact studies

Inland navigation

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Hawser forces
Lock Approach Hydraulics
Lock filling and emptying
Lock gates
Navigation hydraulic design
Navigation locks & dam equipment
Ship simulators for navigation channel design
Training structures, wing dams and closing dams
Vessel impacts on biological communities
Vessel induced waves and currents on moored vessels, banks, and backwaters
Wave/Current/Structure Impacts on Navigation Channel Design

Planning analysis

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Plan formulation and evaluation
Flood damage reduction measures
Flood fighting
Flood warning
Levee certification
Non-structural analysis
Flood damage reduction models
Interior flood control
Integrated Water Resource Management
Structure inventories

Reservoir systems analysis

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Evaporation
Induced surcharge ratings
Operations research/optimization
Reservoir regulation
Water Control Plans
Rule curves
Sedimentation/surveys/models
System modeling

River hydraulics

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CEIWR-HEC-HH
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1-D modeling
2, 3-D modeling
Bridges, culverts, and weirs
Gated structures
Computational numerical modeling
Floodplain management and mapping
Micromodeling
Physical modeling
Dam and levee breaching
Navigation dams

Riverine erosion and sediment transport

Jack Davis
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Sediment modeling, 1-D
Sediment modeling, 2-D and 3-D
Bed and bank erosion
Bridge Scour
Debris production/yield and flow
Debris/sedimentation basin design
Slope protection and erosion control
Erosion Control Structure (DEC Program)
Freeze-thaw induced bank failure
Land surface erosion
Mobile boundary hydraulics
Sedimentation retention studies

Statistics and risk

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Drought frequency analysis
Flooding frequency analysis
Flow duration
Frequency of extreme events
Risk analysis
Stochastic hydrology
Uncertainty in hydrologic forecasts
Uncertainty in hydrologic relationships and models

Surface water hydrology

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Sub area

Climate change
Closed basin lakes
Non-Corps hydrologic models
Standard Project Flood
Hydrologic modeling
Infiltration and losses
Precipitation analysis
Real time rainfall/snowmelt runoff modeling
Regional Analysis
Snowmelt
Spatially distributed modeling
Urban Hydrology

Water control management

Joe Evelyn
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Data acquisition and management
Drought management
Real-time flow/stage forecasting
Gaging stations, rainfall, river
Lakes, water control management
Operation expertise
Ponds and reservoirs
Sustainable Rivers Project (COE/TNC)
Corps of Engineers Water Management System
Water data
Water Resource Allocation

Water quality

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Agricultural, stormwater, wetland, urban runoff, water supply water quality
Rivers, lakes, reservoir water quality
Salinity management
Thermal assessment/management
Total dissolved gas analysis/management
TMDLs
Toxics management

Use attainability analysis

Water quality analysis/data mgmnt/standards/trading

Modeling, water quality