

Scott Shipley, P.E.



S2O Design and Engineering

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Background

Scott brings a unique set of qualifications to the whitewater park design field. He has over 30 years experience as a whitewater kayaker including four World Titles, Three Olympic Berths (Barcelona, Atlanta, and Sydney), 10 national titles and numerous other international medals in both slalom and freestyle kayaking. Additionally, Scott has both a Bachelor's and a Master's in Mechanical Engineering, with highest honors, from the Georgia Institute of Technology, a top-five Engineering School. Scott combines his background, education and experience to create some of the largest and most unique whitewater parks in the world. This includes the National Whitewater Center, a 37 million dollar venue that is the largest, most efficient, and most profitable whitewater park design in the World.

Education/Qualifications

Master's degree in Mechanical Engineering, 2002: Graduated, with highest honors from the Georgia Institute of Technology with a focus on mechanics of materials. Expertise in CAE (Ideas and ABAQUS CAE) and design methodologies.

Bachelors degree in Mechanical Engineering, 2001: Graduated with highest honors in the top 20 in his class, at the Georgia Institute of Technology—the number 3 engineering school in the country—with a broad understanding of engineering concepts, including fluid mechanics, mechanics of materials, thermodynamics and heat transfer, and system dynamics.

Registered Professional Engineer in six states: Have successfully completed all requirements, including both the FE and the PE exams to become a registered engineer in any state, including the state where your project is, in the United States.

Member, ASME, ASCE

Proficient in Ideas, Abaqus CAE, Autocad, Civil 3D, Maple, Matlab, Excel and Office Applications as well as HEC-RAS. Capable of providing highly analytical analysis in two and three dimensions including flow and stress analysis as well as modeling and assembly modeling.

Interesting Projects:

Athlete—Scott's athletic background is tremendously varied and includes many of Scott's interests through the years. Many of the current US team athletes were coached and mentored by Scott—including Colorado's own superstar Zuzana Vanha and U.S. National Champion Scottie Mann. Scott's competition results also span the gamut of whitewater sport. Scott is a 3-time Olympian, 10-time national champion, 8-time World Cup medalist (including three World Cup Championships), Three time world Silver medalist and former World Champion. Additionally, Scott is a former freestyle world silver medalist, Japanese champion, and two-time national team member, former member of the U.S. surfing team, and was undefeated in extreme races until his retirement in 2000.

Public Service—Scott, along with his agent, Sue Fuller, initiated, coordinated, and implemented an aid trip to the town of Bihac, Bosnia shortly after the end of the civil war there. The project supplied the supplies and equipment necessary to rebuild the Bihac boating club. On the trip Scott and Sue paddled with several of the young children in the club there. Eight years later two of these children raced in the 2004 Olympic Games. The project was featured on CBS, NBC, and a variety of other networks as well as in a 1 hour documentary special.

Author—Scott authored and self published *Every Crushing Stroke*, a book on training and technique for developing and top level slalom athletes. The book provides the know how, practical tips, and current practice of top level slalom athletes. The book has been sold in over 20 countries and remains the number one resource for up and coming slalom athletes.

Engineer—Scott has spent four years designing, developing, and now building the National Whitewater Center. The center is designed to accommodate all levels of boater with special purpose areas for developing boaters, slalom athletes, freestyle athletes, female athletes (designed in coordination with Anna Leveque), as well as casual visitors to our sport. This venue has provided a championship venue that will develop the sport in terms of sponsorship dollars, t.v. exposure, coordination of events, and recruitment to the sport. The financially efficient design of this course has led to others in other large cities.

Boat Designer—Scott worked on five separate boat designs over the course of six years in an innovative project that was the first to use computer aided design (a la Americas Cup) to electronically design, shape, and test whitewater boats. These boats, the predator series, won numerous medals including World Cup, Olympic, and World Championship Medals. Some of these boats were still in use in Europe and America in the 2004 games, four years after Scott retired. The design paradigm used in this project continues to be used by whitewater boat designers today.

Administrative—Scott has served on both the USNWC board and as an active member of the Nantahala Racing Clubs efforts. Scott's efforts have included spearheading programs to develop local racing initiatives, help in policy setting—including active efforts to ensure background checks for coaches and staff, help in fund raising and sponsorship acquisition including the garnering of the Nations Bank sponsorship that supported both the U.S. team and the NRC over a period of roughly eight years. Scott's current projects include work to ensure the future of the NRC during its current funding crisis by partnering the program with one of Charlotte's universities and working to bring the National Championships to the National Whitewater Center during its initial year.

Work/Project Experience

Current, President, S2Odesign—Currently run a firm that specializes in top-end whitewater park planning, design, construction, and operations. My firm either employees, or works in a joint venture, to bring industry leading experts to the table to ensure that these whitewater super-parks are expertly and efficiently designed, implemented, and opened.

2002-2007, Engineer, Recreation Engineering and Planning. Worked with Gary Lacy to design over 20 *Whitewater Park Projects*. Expertise including CAD, HEC-RAS, Physical Modeling, Planning, Analysis, Implementation, and Construction/Construction Oversight. In this job I was directly responsible for implementing specific tasks on, or entire projects related to, whitewater parks. A list of projects include these highlights:

- **The U.S. National Whitewater Center**—Chief engineer and designer: Responsible for all aspects of this project including planning, working with the business model, conceptual, preliminary, and final design, computer and physical modeling, design revision, creation of design documents, construction preparation, oversight, and inspection, and final design testing and evaluation as well as start-up services.
- **The Durango Boating Park**—Chief Engineer and Designer: Responsible for all aspects of this job including expert witness testimony in support of a recreational in-channel water right. Work items include conceptual, preliminary and final design, including an extensive site selection public process, computer modeling, preparation of all design documents, implementation and report on flood modeling. Current efforts include completion of the trial, permitting, and construction oversight and inspection.
- **Waveyard and Unnamed Super Park**—Created an extensive business model and performance based on expected capital and ongoing costs as well as operational incomes over the life of the project. These performance were used to secure funding for and begin the design process on these facilities, set to open in 2010. Also created preliminary design data and master planning and layout designs. Currently working on design and implementation of these half billion dollar facilities.
- **Steamboat Boating Park, Salida Boating Park, Durango Boating Park**—expert witness on the use, functionality and design of whitewater parks. Provided expert witness testimony before the Colorado Water Conservation Board as well as in district water courts in the State of Colorado related to garnering of an Recreational In-Channel Diversion that preserves flows in these boating parks for all time.
- **San Marcos Dam Stabilization Project**—Worked to create a design, computer model, and construction documents for this rushed stabilization project in San Marcos Texas. This project included rush support for permitting, construction documents, and implementation in order to transform a failing low-head dam into a stable and extended in-stream whitewater park.
- **Engineer/consultant, Rutherford Creek Whitewater Park**—Post construction evaluation and redesign. Hired by park owner to evaluate the existing design and functionality of this 3 million dollar park. Subsequently asked to consult on redesign, construction methods, and implementation of fixes to this inadequately designed facility.
- **Dallas/Trinity River Whitewater Park Design and Feasibility Study**—Worked with Dallas based company to determine feasibility, functionality, layout, functionality, costs, and possible operating plans for this 16 million dollar whitewater park facility.

2001-2002, Graduate Research Assistant, Georgia Institute of Technology. Worked as a graduate research assistant responsible for completing research in three areas: Design, for the Environmental Conscious Design and Manufacturing lab, material properties for the Mechanics of Material Research Group and a special project using FEA to investigate the role of Asperities in surface friction for Dr. Itzhak Green.

1996-2003, Boat Designer, Harriman, Tenn. Worked with the Dagger Canoe Company in Tennessee to design a series of race kayaks that was the most successful American designs in history. Accolades include best-selling slalom kayak in America, several World Cup Titles, an Olympic Medal, and numerous other wins. Project featured innovative computer design techniques and was featured in Popular Mechanics.

Awards

2006, Best of What's New, Recreation Category, Popular Science. Featured in Popular Science for the successful completion and start-up of the world's largest and most profitable whitewater park. Past winner of BOWN awards include Volvo, Airbus, and other major firms. I have consistently been afraid that they will take this award back when they find out it was just me and not some important firm.

2006 Inductee, International Whitewater Hall of Fame. Became the first men's slalom kayaker ever to be inducted into the whitewater hall of fame.

1993, 1997. USOC top ten athlete of the year. Voted in the top ten of all Olympic athletes by the USOC in their annual vote.

2006, USOC Jack Kelly Fair Play Award for Outstanding Sportsmanship. Received for donating a boat that I paddled to a Bosnian paddler who had damaged his just prior to the 1996 games. The Bosnian, who had left his hometown to travel to the Olympics in a helicopter that was under fire, was able to successfully complete both of his runs.

2006, Everest Award Winner. The Everest Awards are considered the Oscars of the Outdoors recognizing the top athletes of the year. Winning "An Everest" is one of the greatest achievements in all of climate sports. Nominations were submitted by the public on line and selected by an editorial committee.

Publications

D. Shepherd, T. Winhold, B. Hughes, S. Shipley. "**Calgary Bow River Weir Project: Creating Recreational Opportunities and Improving Fish Passage Through Physical Modelling.**" Challenges for Water Resources Engineering in a Changing World. Winnipeg, Manitoba: 18th Canadian Hydrotechnical Conference, 2007.

Lin, Shepherd, Slack, Shipley, Nilson. "**Use of CFD Modeling for Creating Recreational Opportunities at the Calgary Bow River Weir.**" World Environmental and Water Resources Congress. Honolulu, Hawaii, 2008.

Shipley, Scott. **Every Crushing Stroke, The Book of Performance Kayaking.** Atlanta, GA: Crab Apple Publishing, 2001.