

Beneficial Design
Designing Beyond the Norm to Meet the Needs of All People
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Opening

Beneficial Design

Designing Beyond the Norm to Meet the Needs of
All People

Research
Design
Education

Beneficial Designs' Mission Statement

Introduction to our Staff

Wheelchair Testing: Drum tester

Wheelchair Testing: Drop tester

Wheelchair scales

Wheelchair tip testing dummy

Wheelchair incline tester

View of the Shop

Design of Consumer Products

Product Development
Assessment of Products
Universal Design of Products

Product Development

Mainstream Products
Opportunity for Universal Design
Adaptive Products
 Personal Technologies
 Activity Specific Technologies

Balance Dimension

Physical
Intellectual
Spiritual

Peter and Ria at scenic overlook

White water rafting

Zip line adventure

Peter exercise modeling

Painting

Sociological Dimension

Dependence
Independence
Interdependence

Personal Technologies
Activity-Specific Technologies
Environmental Technologies

Activity-Specific Technologies

Arroya Sit Ski

Mono Ski

Bi Ski

Dynamic Seating Spring Assist

Cross Country Ski

Pax Back

Aircraft Aisle Chair

Piano Pedal Pusher

Manual Vehicle Hand Controls

Dynamic Seating

Hand Bike

Contoured Seating

SKELI with Pelvis Model

Pressure Diagram

SKELI Used on Foam

Seat Cushion Testing

Pressure Seating Graphs

ASLI Prototype

Pressure Measurements

Pelvis Movement During Extensor Thrust Activity

Force at Thigh and Backrest During Extension
Pelvis Moves Up, Out and Rotates

Variations of Belt Angle

Downward Pull Limits Upward Movement
Allows Posterior Pelvic Rotation
Limits Full Anterior ROM

HipGrip

Dancing

Hip Grip Components

Modular Hardware

Pivot Bracket - Current Design

**HipGrip
Test
Fixture**

Functional Forward Reach

Functional Reach Downward

FlexRim – Combining the discrete compliant fasteners into one

GripRim

Benefits of a Universal Design Canoe Seat for Paddler Function

Adaptive Canoe Seating

Universal Canoe Seating System Components

Canoe Seating Tester

Methods – Endurance

MedGraphics VO2000 portable metabolic system
Resting, self-selected paddling, and self-selected
pace + 20%

Methods – Strength

Dynamic power from Concept2 rowing ergometer
Maximal isometric paddle pull

Lateral Balance Test

Water Egress Testing

Wave Ski

Tools and Technology for Accessible Trails

Universal Trail Assessment Process

Philosophy that designs for all potential users to
the greatest extent possible

Greatest Barrier to Facility and Trail Use

Emeryville Marina Wind Surf Launch Site

Water Trail Solutions

Universal Trail Assessment Process (UTAP)

**High Efficiency Trail Assessment Process
(HETAP)**

**Developed Outdoor Recreation Assessment
Process**

Outdoor Constructed Features

DORAP for mobile devices

Information Available... ..Plan Accordingly

Trail Access Information Sheet

Develop standards for trail design

ADA Recreation Trail

Playground Surface Testing

Rotational Penetrometer

Gravelpave

Trail Rutting and Braiding

New Boardwalk Substructure

Barrier at Riverview Park

Third Inverted Bollard Design

Electronic Gate Barrier

**Pedestrian and Motorized Vehicle Trail Traffic
Counter**

Designing Sidewalks and Trails for Access Part 2

The Population is Aging

Characteristics of Pedestrians

Barriers in the Pedestrian Environment

Sidewalk Assessment Process (SWAP)

**Pedestrian Right of Way Assessment Process
(PROWAP)**

NvDOT Pilot Work

Data Export Formats Supported

The Manual Wheelchair Training Guide

Wheelchair Standards

Volume 1: Wheelchairs

Volume 2: Wheelchairs with Electrical Systems

Drum Tester

Stability Testing

A Guide to Wheelchair Selection

**Universal Design of Fitness Equipment (UDFE)
Standards**

Fitness Equipment

**Development of Uniform Standards for Cognitive
Technologies**

Cognitive Research Symbol

Amusement Park Wheelchair Access

Peter and Ria at the Golden Gate Bridge

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