

# Resume Guide

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## WHY A RESUME

Resumes are an extremely important part of the job search process: namely to secure an interview.

A resume is a one or two page (at most) summary of your skills, accomplishments, experiences and education designed to capture a prospective employer's interest. The resume is also a great way to capture and organize, neatly and concisely, your skills and experience which will be very useful when it comes time to interview. The resume is the primary tool of your job search and may take several drafts to prepare effectively.

Resumes must do their work quickly. Employers or Human Resources personnel may look through hundreds of resumes for a particular position and may spend only a *few seconds* reviewing each. To get someone to look at it longer, your resume must convey quickly that you are capable and competent enough to be worth an interview. Employers use this tool to screen potential candidates before granting interviews, so the goal is to use the resume to entice the employer to want to meet you. The more thoroughly you prepare your resume now, the more likely someone is to read it later.

## COMPONENTS OF A RESUME

There are four basic styles of resumes:

### REVERSE-CHRONOLOGICAL

Also called simply "Chronological," this is the most common resume format. It's also the simplest to create. Education and Experience are each listed by category, in reverse-chronological (most recent first) order. The chronological resume is usually best for undergraduates and entry-level candidates. This handout will focus primarily on the chronological resume format.

### FUNCTIONAL (experience sorted by relevance to career objective)

A functional resume differs from a chronological resume by concentrating on skills that you have used that relate to your stated objective rather than on the jobs you have had.

A functional resume is particularly effective if your work experience has not been closely related to your job objective, if you are changing careers, or if you are seeking a promotion. In this format you elaborate on the skills necessary to perform the desired job and how you have demonstrated those same skills in different types of jobs.

Because the Functional Resume is not recommended for most entry-level candidates, it will not be described in detail in this handout.

### COMBINATION

The combination chronological/functional resume uses elements of both styles. The qualifications (areas of effectiveness) of the functional resume remain within specific job/experience descriptions. The jobs/experiences are then grouped and categorized to show the strengths in two to four categories. This resume format is effective if at least some of your experience is related to the job objective, and also when the job objective has more than one component and you have experience in these different components (e.g., technical and management; sales and organizational).

Because the Combination Resume is not recommended for most entry-level candidates, it will not be described in detail in this handout.

### CURRICULUM VITAE

Also called a "CV," this is a highly specialized resume format used by those individuals seeking a teaching and/or research position in a postsecondary institution or high-level research industry. Information in all categories should be in reverse chronological order (the most recent data first).

## Creating your Chronological Resume:

### I. Header

Your contact information

- Your name should be the biggest item on the page and be on its own line
- Use an address where you can receive correspondence
- Supply the phone number whose line offers you the most privacy for you to speak professionally on (ensure you have a PROFESSIONAL greeting on your answering machine)
- Include your e-mail address
- DO NOT list your age, gender, religion, political affiliation, marital status, health status or social security number

### II. Objective

A clear and concise statement that can communicate the following:

- The position or field you desire and your long term goals
- The position or field you are pursuing and the skills you wish to use
- The position or field you desire and the responsibilities you are seeking
- REMEMBER – a poor objective can hurt a resume. Be sure NOT to use vague, general statements (e.g, "Electrical engineering graduate looking to apply leadership and technical skills to a challenging position with potential for growth.")

### III. Education

Where you can indicate your educational and academic background

- Name of Institution, City, State
- Type of degree: Bachelor of Science, Master of Science, Ph.D.
- Date of graduation or anticipated graduation date

Additional Sub-headings under Education could be:

- Academic Projects: especially Senior Design Project which can be a separate sub-heading
- Related Coursework: 4-6 courses that relate to the employer and/or position, no more than 8
- Honors: Deans List, with semesters, Honor Societies, Scholarships, Awards, Academic Honors, etc.

Optional information could be:

- GPA if 3.0 or above (general rule of thumb, if GPA is not above a 3.0, do not include it)
- Fundamentals of Engineering Exam can be phrased: "Certified Engineer-in-Training, Date" once you've passed
- Hours worked to finance \_\_\_% of your education
- Any relevant seminars or workshops you've attended

### IV. Experience

Information that should be included:

- Name of company
- Location of company, city, state
- Dates of employment
- Job Titles and if applicable, department
- Provide a brief job description (bulleted list or short paragraph), using appropriate action verbs that emphasize your strengths. Make sure you use the proper verb tense.
  - Focus on your significant achievements and contributions
  - Focus on how you saved the employer time and money
  - QUANTIFY your accomplishments whenever possible  
For example: "Project scheduled for 49 days completed in 27" and "Software enhancements cut required purchase processing time by 38 percent"

If applicable, you can divide your work experience into two categories: "Experience" (or "Related Experience") and "Additional Experience" (or "Other Experience").

## V. Skills

There are three different skill sets that can be listed as sub-headings under "Skills" or be their own main heading.

- Computer Skills: List ALL computer skills in some type of order
- Language Skills: If need be, you can break these out into "Fluent in" and "Conversational in"
- Lab Skills

## VI. Activities/Affiliations

List any memberships or affiliations you have, indicating any offices held and achievements related to these activities.

- Membership in an engineering society, honor societies, student organizations, etc.

## VII. Interests (not essential)

This section is used to show that you are a well-rounded individual. List any hobbies or interests that you feel might add "spice" to your profile. Make sure that the information you provide is appropriate and useful.

## VIII. Other Possible Section Headings

- Citizenship
- Military Experience
- Publications and/or Patents held or pending
- Volunteer/Community Activities

## THE GLANCE TEST

To make sure your resume looks flawless and noticeable, you want to make sure that your resume will pass the glance test. You should ask yourself these questions when preparing for the glance test:

- Is your format consistent throughout the resume?
  - If you use periods, use periods throughout.
  - Use the same bullets throughout.
  - If indenting, indent the same amount each time.
  - Make sure top and bottom margins are equal and right and left margins are equal.
  - Use standard typefaces such as Arial, Helvetica, Universe, Times, Palatino, Century, and Courier.
  - Use a font size of 10 to 14 points. (Avoid Times New Roman 10 point).
  - Avoid fancy treatments such as italics, underline, shadows, and reverse (white letters on black background).
  - Avoid vertical and horizontal lines, graphics, and boxes.
  - Avoid two-column format or resumes that look like newspapers or newsletters.
  - List each phone number and e-mail on its own line.
- Do you have too much or not enough white space?
  - You want to make sure that you format the resume so that the white space is kept to a minimum, while not overwhelming the reader with too much text.
- Does your resume look symmetrical?
- Have you SPELL-CHECKED? There is **NO** excuse for a misspelled word and recruiters may view it as laziness
- Are you utilizing action verbs? (A list of actions verbs can be found on page 7)
- **Have you proofread?**

Once you've answered these questions to your satisfaction and corrected any problems found, proceed with the glance test. Hold your resume in front of you for ten seconds...does it look good, are you satisfied with your work?

## OTHER MISCELLANEOUS INFORMATION YOU SHOULD KNOW

- When writing numbers, numbers one – ten should be spelled out, numbers 11, 12, 13, 14...can be written using the number symbol.
- When describing your past experience, use verbs written in the past tense (Designed). When describing your present experience, use present-tense verbs (Design).

## WHAT NOT TO PUT ON A RESUME

There are certain pieces of information that you should never include on your resume. These include:

- Your social security number. Who knows who's hands your resume could fall into? Identity theft is a very real problem, and they don't need your SSN until after you've been hired, anyway.
- Personal information that could be used to discriminate against you. An employer doesn't need to know your age, race, religion, gender, marital status, whether or not you have kids, your nation of origin, your weight, your height, your sexual orientation, or your politics. **None of that has anything to do with your ability to carry out the requirements of the job.** It's illegal for employers to even ask you for that information while you're applying, so you shouldn't volunteer the information.
- References. The only person who's name should be on your resume is yourself. It's good to have references that you can give to an employer when they ask, but they should always be on a separate document, which you give to the employer only after they've asked. It's common to conclude a resume with "References Available Upon Request," and there's nothing wrong with including that if you have room, but it's generally assumed by most employers that you can provide references when asked.
- Anything negative. Did you get fired from a previous job? Did you get laid off because your boss ran the company into the ground? Do you hate eating your vegetables? Whatever it is, keep it to yourself. You don't want to look like a complainer, and you certainly don't want to look like a backstabber. Only provide positive information about yourself, and never badmouth a previous employer, even if working for them was the worst experience of your entire life.
- First person pronouns. Using words like "I," "me," "my," etc, just doesn't look very professional. Avoid them, which should be easier if you're making an effort to start sentences with verbs. The only place it's appropriate to use a first person pronoun is in your Objective statement or possibly referring to "we" on a group project, but try to avoid it.
- Your picture. You're applying for a professional position, not auditioning for a TV show. They don't need a headshot.

## RECRUITERS' TOP 10 RESUME PET PEEVES

Recently, ResumeDoctor.com<sup>1</sup> asked more than 2,500 recruiters from a variety of industries what their pet peeves were when it comes to resumes:

- 1.) Spelling Errors, Typos and Poor Grammar – make sure you spell-check AND proofread
- 2.) Too Duty-Oriented – don't just write the company's summary of your position, explain your accomplishments
- 3.) Inaccurate Dates or None at All – this missing or inaccurate information could send up red flags
- 4.) Inaccurate or Missing Contact Information – if a recruiter can't reach you they will move on to someone else
- 5.) Poor Formatting
- 6.) Functional Resumes
- 7.) Long Resumes – too much information will simply waste a recruiter's time
- 8.) Long Paragraphs – stay focused and concise
- 9.) Unqualified Candidates
- 10.) Personal Information Unrelated to the Job

## ACTION VERBS

Good use of action verbs can mean the difference when it comes to getting your foot in the door and being invited for an interview. Remember, a hiring manager probably sees dozens of resumes for each position they're trying to fill, each with a similar list of skills and experience. The key is to make sure yours gets noticed. When describing experience, try to start each sentence with an action verb. Don't use the same verb repeatedly, and don't limit yourself to this list.

**A-B:** accelerated, acclimated, accompanied, accomplished, achieved, acquired, acted, activated, actuated, adapted, added, addressed, adhered, adjusted, administered, admitted, adopted, advanced, advertised, advised, advocated, aided, aired, affected, allocated, altered, amended, amplified, analyzed, answered, anticipated, appointed, appraised, approached, approved, arbitrated, arranged, ascertained, asked, assembled, assigned, assumed, assessed, assisted, attained, attracted, audited, augmented, authored, authorized, automated, awarded, avail, balanced, bargained, borrowed, bought, broadened, budgeted, built

**C:** calculated, canvassed, capitalized, captured, carried, out, cast, cataloged, centralized, challenged, chaired, changed, channeled, charted, checked, chose, circulated, clarified, classified, cleared, closed, co-authored, cold, called, collaborated, collected, combined, commissioned, committed, communicated, compared, compiled, complied, completed, composed, computed, conceived, conceptualized, concluded, condensed, conducted, conferred, consolidated, constructed, consulted, contracted, contrasted, contributed, contrived, controlled, converted, convinced, coordinated, corrected, corresponded, counseled, counted, created, critiqued, cultivated

**D:** debugged, decided, decentralized, decreased, deferred, defined, delegated, delivered, demonstrated, depreciated, described, designated, designed, determined, developed, devised, devoted, diagrammed, directed, disclosed, discounted, discovered, dispatched, displayed, dissembled, distinguished, distributed, diversified, divested, documented, doubled, drafted

**E:** earned, eased, edited, effected, elected, eliminated, employed, enabled, encouraged, endorsed, enforced, engaged, engineered, enhanced, enlarged, enriched, entered, entertained, established, estimated, evaluated, examined, exceeded, exchanged, executed, exempted, exercised, expanded, expedited, explained, exposed, extended, extracted, extrapolated

**F-H:** facilitated, familiarized, fashioned, fielded, figured, financed, fit, focused, forecasted, formalized, formed, formulated, fortified, found, founded, framed, fulfilled, functioned, furnished, gained, gathered, gauged, gave, generated, governed, graded, granted, greeted, grouped, guided, handled, headed, hired, hosted

**I:** identified, illustrated, illuminated, implemented, improved, improvised, inaugurated, indoctrinated, increased, incurred, induced, influenced, informed, initiated, innovated, inquired, inspected, inspired, installed, instigated, instilled, instituted, instructed, insured, interfaced, interpreted, interviewed, introduced, invented, inventoried, invested, investigated, invited, involved, isolated, issued

**J-M:** joined, judged, launched, lectured, led, lightened, liquidated, litigated, lobbied, localized, located, maintained, managed, mapped, marketed, maximized, measured, mediated, merchandised, merged, met, minimized, modeled, moderated, modernized, modified, monitored, motivated, moved, multiplied

**N-O:** named, narrated, negotiated, noticed, nurtured, observed, obtained, offered, offset, opened, operated, orchestrated, ordered, organized, oriented, originated, overhauled, oversaw

**P:** paid, participated, passed, patterned, penalized, perceived, performed, permitted, persuaded, phased, out, pinpointed, pioneered, placed, planned, polled, prepared, presented, preserved, presided, prevented, priced, printed, prioritized, probed, processed, procured, produced, profiled, programmed, projected, promoted, prompted, proposed, proved, provided, publicized, published, purchased, pursued

**Q-R:** quantified, quoted, raised, ranked, rated, reacted, read, received, recommended, reconciled, recorded, recovered, recruited, rectified, redesigned, reduced, referred, refined, regained, regulated, rehabilitated, reinforced, reinstated, rejected, related, remedied, remodeled, renegotiated, reorganized, replaced, repaired, reported, represented, requested, researched, resolved, responded, restored, restructured, resulted, retained, retrieved, revamped, revealed, reversed, reviewed, revised, revitalized, rewarded, routed

**S:** safeguarded, salvaged, saved, scheduled, screened, secured, segmented, selected, sent, separated, served, serviced, settled, shaped, shortened, showed, shrank, signed, simplified, sold, solved, spearheaded, specified, speculated, spoke, spread, stabilized, staffed, staged, standardized, steered, stimulated, strategized, streamlined, strengthened, stressed, structured, studied, submitted, substantiated, substituted, suggested, summarized, superseded, supervised, supplied, supported, surpassed, surveyed, synchronized, synthesized, systematized

**T-W:** tabulated, tailored, targeted, taught, terminated, tested, testified, tightened, took, traced, traded, trained, transacted, transferred, transformed, translated, transported, traveled, treated, tripled, uncovered, undertook, unified, united, updated, upgraded, used, utilized, validated, valued, verified, viewed, visited, weighed, welcomed, widened, witnessed, won, worked, wrote

Remember: if your resume isn't perfect, you won't get invited for an interview and you won't have an opportunity to prove you're the perfect person for the job!

# Sample Resumes

The examples in the following pages are intended as guidelines only. Remember: there's more than one right way to create a resume. The final product should be unique to you, and not a copy of something you find here or anywhere else.

## JENNIFER Z. WILSON

### School Address

10 Buick St, Box 1234  
Boston, MA 02215  
617.555.8913

jzwilson@bu.edu

### Permanent Address

123 Any Street  
Lenox, MA 01240  
413.555.9876

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## EDUCATION

### Boston University College of Engineering, Boston, MA

- Bachelor of Science in Computer Engineering, expected in May 2010
- GPA: 3.4/4.0

### Relevant Coursework

Differential Equations, Electric Circuit Theory, Computer Organization

## PROJECTS

- Created 3-D object codes using computer aided design tools, as well a prototype of a product to market it to appraise its commercialization potential in EK 130 course.

## TECHNICAL SKILLS:

- Languages: C#, C++, Java, Verilog, Assembly Language (MIPS, HC12)
- Operating Systems: Microsoft Windows (98, XP, Vista), Mac OS X, Linux

## EXPERIENCE

### Office of Information Technology, Boston University

August 2007 – Present

PCSC Student Consultant

Boston, MA

- Support the general computing needs of students, faculty, and staff of a university with over 15,000 undergraduate students.
- Lead team of five undergraduate students, including training of new student consultants.
- Fostered a positive work environment to improve timeliness of client requests.

### Citizen's Bank

June 2006 – August 2006

Teller

Boston, MA

- Managed account transactions for customers totaling over \$10,000 dollars.
- Balanced with 99.99% accuracy at end of every shift.
- Awarded employee recognition award twice for superior customer service.

## PROFESSIONAL ASSOCIATIONS

- Institute of Electrical and Electronics Engineers (IEEE) member since 2007
- Society of Women Engineers, Boston University Chapter, member since 2006

## ZHUANGLI (MICHAEL) XENG

United States Citizen

**Local Address:** 700 Commonwealth Avenue, Box 9076 · Boston, MA 02215 · (617) 555-3591

**Home Address:** 8 Sandy Brook Lane · Golden, CO 80402 · (719) 555-9240  
**zenzen@bu.edu**

- OBJECTIVE** A summer internship in Biomedical Engineering
- EDUCATION** **Boston University College of Engineering**, Boston, MA  
Bachelor of Science, May, 2009  
Biomedical Engineering Major
- Technical University of Dresden**, Dresden, Germany  
Semester-long Study Abroad Program, Spring, 2008
- Relevant Coursework:**  
Organic Chemistry, Mechanics, Engineering Physiology, Electric Circuit Theory, Molecular Biology, Introduction to Electronics, Tissue Engineering and Drug Delivery, Signals and Systems, Macroeconomics
- PROJECT** Designed, constructed and tested a Truss bridge model according to specified dimensions. Developed designs and predicted points of failure using WinTruss computer application.
- SKILLS** MATLAB, C++, Infrared Spectroscopy, AutoCAD  
Fluent in Mandarin and Cantonese Chinese
- EXPERIENCE**
- |  |                     |
|--|---------------------|
| <b>Work Study</b>  | Fall 2007 – Present |
| <b>BU Personal Computing Center</b>  | Boston, MA          |
| • Troubleshoot and repair computing problems for University faculty, staff, and students                               |                     |
| <b>Dean’s Host</b>   | Fall 2007 – Present |
| <b>BU College of Engineering</b>   | Boston, MA          |
| • Represent the College of Engineering at formal functions including Parents’ Weekend and Open House                   |                     |
| • Conduct campus tours and address questions for prospective students and their families in groups of approximately 20 |                     |
| <b>Sales Associate</b>   | Summers 2006, 2007  |
| <b>Victory Sporting Goods</b>  | Golden, CO          |
| • Regularly surpassed weekly sales goals   |                     |
- ACTIVITIES & INTERESTS** Biomedical Engineering Society (BMES) at BU, member since 2007  
The Asian Society at Boston University, member since 2007  
Personal interests include hiking, camping, and fantasy baseball

**Sara Mitchell**  
saramitchell@gmail.com  
(617) 555-2626

**Permanent Address:**  
12 Roads Way  
Richmond, VA 34226

**School Address:**  
4 Quince Avenue # 6  
Allston, MA 01662

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**OBJECTIVE**

To secure a position as a mechanical design engineer focusing on consumer products

**EDUCATION**

**Boston University College of Engineering**

Candidate for Bachelor of Science in Mechanical Engineering  
G.P.A.: 3.6/4.0  
Dean's List (five semesters)

Boston, MA  
May 2008

**Related Courses**

Mechanical Vibrations  
Structural Mechanics  
Material Science

Machine Design I, II  
Energy and Thermodynamics  
Heat Transfer

**PROJECT EXPERIENCE**

**“Artificial Intelligence Computer Design,” Raytheon Company**

May 2008

Worked with senior level engineers at Raytheon to assess company needs, performed market analysis and presented design to company representatives.

- Worked with group of six to assess functionality of system
- Prepared, executed and analyzed tests of an artificial intelligence computer design system
- Designed centrifugal compressors, axial compressors and turbines for gas turbine engines using AutoCAD
- Communicated with and presented findings to senior level engineers at company

**SKILLS**

**Software:** Pro-Engineer, AutoCAD, MathCAD, UNIX, Matlab, Solidworks

**Certifications:** Electrician's License

**ACTIVITIES & ACHIEVEMENTS**

- Member, Society of Mechanical Engineers
- Member, Boston University Debate Society
- Member, Tau Beta Pi Engineering Honor Society

**Tim Sullivan**  
1221 Beacon Street Apt. 6  
Brookline, MA 02446  
(617) 555-1978  
tsullivan@bu.edu

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**EDUCATION**

**Boston University College of Engineering**, Boston, MA  
Bachelor of Science in Manufacturing Engineering May 2009  
G.P.A.: 3.2/4.0  
Dean's List (two semesters)  
Worked 20 hours per week to finance college expenses

**Technische Universitat Dresden**, Dresden, Germany Fall 2008  
Studied abroad at technical institute, earning 20 engineering credits

**Related Coursework**

Design and Manufacture	Engineering Economy
Materials Processing	Product Design
Statistics and Quality Engineering	Operations Research

**Senior Project**

“Design Optimization Project,” **Weir Valves and Controls** May 2009

- Worked as part of a five person team using reverse engineering to analyze the technology used by a manufacturing plant
- Made recommendations to improve the technology and product design
- Communicated with senior engineers to review project implementation

**RELATED EXPERIENCE**

**Xenon Corporation**, Woburn, MA January 2008 – Present  
Co-op Engineer

- Devise process documentation for engineering department
- Process field failure reports and engineered mechanical layout of products
- Maintain engineering documentation system

**OTHER EXPERIENCE**

**Campus Convenience**, Boston, MA September 2004  
**Gnomon Copy Center**, Boston, MA September 2005- January 1997

**SKILLS**

- **Computer:** Pro-Engineer, AutoCAD, Turbo Pascal/C++, Manufacturing Productivity Software
- **Languages:** Fluent in Spanish, conversant in French

**ACTIVITIES & AFFILIATIONS**

- Member, Society of Manufacturing Engineers
- Orientation Leader, Boston University College of Engineering
- Completed 2001 Boston Marathon

## SHANIQUA M. WHITE

103 Grey Lane, Apt 8 • Brighton MA 02135 • 774-555-9617 • shasha@gmail.com

### OBJECTIVE

An entry level position in hardware design.

### EDUCATION

#### Boston University College of Engineering

Boston, MA

Masters of Science in Computer Engineering, December 2010, GPA: 3.86/4.00

Bachelor of Science in Electrical Engineering (Magna Cum Laude), May 2007, GPA: 3.81/4.00

#### Related Courses:

Computer Architecture, Advanced Digital Design w/ Verilog, VLSI Design Project, Analog/RF Design, Advanced Microprocessor Design, Hardware Testing, Control Systems, Comm. Systems.

### PROJECTS

- Implemented Soft-core processor with custom built uC/Linux kernel on Altera FPGA. Designed custom software and custom peripheral to create a platform for sensor read out and control via web interface. Modified Ethernet interface to correct for processor bus timing issue.
- Designed mixed signal Zigbee RF receiver. Combined custom analog with synthesized HDL circuitry.
- Performed full chip simulations. Developed novel algorithm for digital BPSK modulation.
- Performed schematic design, PCB layout, and assembly of modular entertainment system including motion sensor control and audio visualization. Performed debug and rework of PCB's resulting in a fully functional system.
- Implemented a 32-bit pipelined processor supporting a subset of the MIPS ISA in Xilinx FPGA. Canonical 5-stage pipeline including data forwarding.
- Implemented 5-bit successive approximation charge redistribution ADC in IBM 7WL 0.18u technology for simulation.

### COMPUTER SKILLS

Cadence (Virtuoso, Spectre, ADE), Mentor Graphics (Calibre xRC, Eldo, ADMS), Orcad Suite (Capture CIS, PSPICE, Layout), Xilinx ISE, Altera Quartus II, C, Python, MATLAB, Linux.

### WORK EXPERIENCE

#### Hardware Engineering Co-op

May 2008 – Present

XER Twindle Labs

Springfield, MA

- Performed verification on read out IC for laser imaging / communication receiver. Consisted of Verilog and SPICE test bench development for functionality and timing.
- Performed schematic level design corrections based on verification results.
- Modified ASIC design flow to include tools for standard cell characterization and static timing analysis of pre and post layout designs which resulted in a 5x reduction of simulation time.

#### Hardware Engineering Intern

May 2006 – September 2006

eLifeline

Danvers, MA

- Debugged prototype and beta boards in order to meet RTM deadlines.
- Modified CPLD Verilog code involved in power-up and initialization of motherboard components.
- Performed design verification tests on prototype motherboards.
- Started redesign of daughter card for I/O expansion of servers with expanded features for firmware development. Additional features included BIOS emulation, PCI port logging, and USB. Completed specifications document and schematic design.

#### Teaching Fellow, Tutor

September 2005 – May 2008

Boston University

Boston, MA

- Experience with all levels of courses from freshmen to graduate students.
- Experience in hands on labs with test equipment as well as with simulation based labs using Cadence Virtuoso and Spectre.
- Run weekly labs and discussions, create and grade homework and labs, hold office hours.

## **NIGEL Y. TUMBOLFORD**

**9 Main Street - Natick, MA 01760 - (508) 555-8397 - nigelrox@bu.edu**

### **EDUCATION**

**Boston University College of Engineering**

Boston, MA

Master of Science, Biomedical Engineering: May 2008

Bachelor of Science, Biomedical Engineering: May 2007 **GPA: 3.86/4.00**

#### **Scholarships:**

Engineering Scholars Program, Tegan Family Scholarship, John Lazzaro Memorial Scholarship

#### **Relevant Coursework:**

Thermodynamics, Skeletal Tissue Mechanics, Signals and Systems, Control Systems, Nonlinear Dynamics, Biomedical Instrumentation, Electronics, Solid Biomechanics, Computer Aided Design and Manufacture

### **EXPERIENCE**

**Intern** · Novel Medical Systems

New Bedford, MA · June 2006 – June 2007

- Performed Electrical Testing on Electrode Sensors
- Designed Prototypes for New Sensor Features
- Tested Mechanical Properties of Adhesives
- Met with Prospective Vendors and Performed Site Visits
- Oversaw Production of Specialized Lot Builds for Testing

**Research Assistant** · Biomaterials Lab at Boston University

Boston, MA · October 2004 – Present

- Polymerized and Tested Mechanical Properties of Hydrogels
- Cultured Vascular Smooth Muscle Cells and Fibroblasts on Engineered Substrates
- Imaged Cells Using Fluorescent and Bright Field Microscopy
- Microfluidic Devices to Create Monodisperse Microbubbles

### **PROJECTS**

**Senior Design Project: “Sensor Development”** (Novel Medical Systems)

Investigated mechanisms for lowering skin impedance on EEG electrode sensor arrays. As a team, analyzed processing ability of potential vendors for parts containing new features for electrodes and helped to design and test new sensor features.

**“Effect of Substrate Stiffness on Cell Migration Behavior”** (Biomaterials Lab at Boston University)

Created hydrogels with different mechanical properties and maintained cell cultures on them. Conducted time-lapse microscopy on plated cells and analyzed their migration using Metamorph microscopy software and ImageJ image processing software.

#### **Additional Projects for Coursework:**

- Created and Analyzed Model of Anterior Cruciate Ligament Reconstruction
- Analyzed Mechanical Heart Valves Using Finite Element Analysis

### **SKILLS**

**Lab:** Cell Culture, Microscopy, Western Blot, Protein Assay,

**Computer:** Matlab, SPSS, C++, ProEngineer, SolidWorks, COSMOSWorks

### **ACTIVITIES AND HONORS**

Tau Beta Pi (Engineering Honor Society) Treasurer

Member of College of Engineering Academic Conduct Committee

Guest Speaker for Engineer Scholars, Student Panel for Incoming Freshman

Avid Soccer Player and Snowboarder

# ANTONINA FEDOSEEV

580 Kirstey Alley, #309, Boston, MA 02215

fedoant@bu.edu (857) 555-6879

First of 2 pages

## OBJECTIVE

To secure an R&D position which will allow me to utilize my experience in electrical engineering and the life sciences.

## EDUCATION

**Boston University College of Engineering** Boston, MA

Masters of Science, Electrical Engineering, December 2008

*Concentrations:* Solid State Devices and Materials, Hardware Design

**Boston University College of Engineering** Boston, MA

Completed Electrical Engineering Core Coursework through Late-Entry Accelerated Program (LEAP), September 2007

**University of California at Berkeley** Berkeley, CA

Bachelor of Science, Physiology and Neuroscience, June 2003

## SKILLS & TECHNOLOGIES

**Programming:** VHDL, Verilog, C++, C#, Assembly, Linux, event-driven programming

**Software Tools:** Xilinx ISE, Quartus II, Visual Studio, Eclipse

**Lab Tools:** Use of oscilloscope and logic analyzer, soldering, use of standard hand tools

## WORK EXPERIENCE

**Project Assistant** May 2006 – August 2006

BU Complex BioSignal Processing Laboratory Boston, MA

- Assisted with development of software for a non-invasive EMG sensor
- Developed signal processing code in C++ which decomposes surface EMG signals

**Research Assistant** June 1999 – April 2004

UC-Berkeley Department of Neurosciences Berkeley, CA

- Completed several investigations of the molecular pathology of muscular dystrophy
- Published five articles reporting original findings
- Extensive experience with molecular, cellular and biochemical techniques

## RECENT PROJECTS

### “Floating Light-Activated Micro-Electrical Stimulators” (9/2007 – present)

Assisting in the design and fabrication of silicon photodiodes for opto-electrical stimulation of neural tissue. Stimulators were designed to meet both electrical performance and tissue biocompatibility demands. Currently, these devices are being modified to be wirelessly-addressable *in vivo*.

### “Biological Sensors Development” (5/2008 – present)

Assisting in the design and analysis of biomolecule sensors, utilizing optical resonance properties in determining the susceptibility of surface-bound DNAs to an applied electric field. The goal of this work is to enable the predictable manipulation of DNAs within the context of other biosensors being developed in the lab.

## ANTONINA FEDOSEEV

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### ADDITIONAL PROJECTS

#### **“Implementation of a digital camera module using a CMOS Image sensor and Altera Cyclone II FPGA” (5/2008 – 9/2008)**

The goal of this project was to utilize the processing capabilities of an FPGA for capturing and displaying streaming video. As hardware design lead, designed all schematics and layout of the PCB, and assisted in the development of Verilog modules for the FPGA and DRAM components.

#### **“Design and simulation of an efficient dual Manchester encoder/decoder for high-speed data transmission” (1/2008 – 5/2008)**

The goal of this project was to completely redesign a Manchester encoder/decoder, an ASIC which is commonly utilized in high speed data applications such as Ethernet routers. This was accomplished by using various hardware design tools: Verilog HDL in ModelSim, Synopsys Design Compiler, Cadence Encounter, and Cadence Virtuoso. The entire process of chip design, from behavioral description to physical design and simulation was completed.

### PUBLICATIONS

- Abdo, A., Sahin, M., Spuhler, P.S., Wu, A.C., Fedoseev, A., and Ünlü, M.S., "Floating Light Activated Micro-Electrical Stimulators," *Neural Interfaces Conference, Cleveland OH*, 16-18 June 2008.
- Hoyte K, Fedoseev, A, Xia B, Martin PT., Transgenic overexpression of dystroglycan does not inhibit muscular dystrophy in mdx mice. *Am J Pathol.* 2004 Feb;164(2):711-8.
- Fedoseev, A, Nguyen HH, Xia B, Kammesheidt A, Hoyte K, Martin PT. Inhibition of dystroglycan cleavage causes muscular dystrophy in transgenic mice. *Neuromuscular Disorders.* 2003 Jun;13(5):365-75.
- Fedoseev, A, Hoyte K, Xia B, Martin PT. Overexpression of the CT GalNAc transferase inhibits muscular dystrophy in a cleavage-resistant dystroglycan mutant mouse. *Biochemical and Biophysical Research Communications.* 2003 Mar 21;302(4):831-6.
- Kang CK, Fedoseev, A, Martin PT. Identification of peptides that specifically bind Abeta(1-40) amyloid in vitro and amyloid plaques in Alzheimer's disease using phage display. *Neurobiology of Disorders.* 2003 Oct;14(1):146-56.
- Nguyen, H., Fedoseev, A., Hoyte, K., Xia, B., Martin, P. The Overexpression of the CT GalNAc Transferase in Skeletal Muscle causes the inhibition of Muscular Dystrophy in mdx mice. *Proceedings of the National Academy Sciences U S A.* 2002 Apr 16;99(8):5616-21.

### HONORS & ASSOCIATIONS

- Boston University Trustees LEAP Tuition Scholarship* recipient  
*Robert C. Dynes Chancellor's Research Scholarship* recipient  
**Institute of Electrical and Electronics Engineers (IEEE)**, member since 2004  
**Association for the Advancement of Medical Instrumentation (AAMI)**, member since 2007  
**Student Association of Graduate Engineers (SAGE)** at BU, member since 2006

## OBJECTIVE

To apply my experience in tissue engineering, molecular biology and chemistry to develop and test new bio-medical products and biotherapeutics for the healthcare industry.

## PROFESSIONAL EXPERIENCE

**Boston University, Department of Biomedical Engineering, Boston, MA**

**January 2006 - present**

**Postdoctoral Research Associate.**

- Skin wound healing and tissue engineering research using cell populated 3D collagen hydrogel scaffolds as a skin model
- Polymer synthesis and *in vitro* investigation of soy bean derived triglycerides and co-polymers for use as a potential skin substitute
- Optimized the novel application of a Dynamic Mechanical Analyzer (DMA) for use in the mechanical loading of cell seeded scaffolds
- Investigated gene expression of cells at the cell-biomaterial interface using qRT-PCR
- Developed 3D *in vitro* breast cancer model incorporating both healthy and cancer cell lines to investigate cell behavior in the 3D environment using confocal microscopy and qRT-PCR

**McGill University, Department of Surgery, Montreal, QC**

**July 2003 – December 2005**

**Postdoctoral Research Associate.**

- Molecular biology research of pig connective tissue cells in 3D collagen gels as a skin wound model
- Isolated pig skin, ligament, tendon and synovial primary cells using tissue explant techniques and investigated the influence of the wound healing growth factor, TGF B<sub>1</sub>
- Compared the genetic expression of two strains of pig cells, Yorkshire and Red duroc, using semiquantitative RT-PCR

**New York University, Department of Chemistry, New York, NY**

**May 2002 – October 2002**

**Research Assistant.**

- Synthesized a series of amino acid based building blocks using alkene metathesis for a combinatorial chemistry library

## EDUCATION

**New York University, Department of Chemistry, New York, NY**

Doctor of Philosophy, Inorganic Chemistry, December, 2002

- Developed, synthesized, characterized and conducted preliminary polymerization testing of metal based complexes as potential olefin catalysts
- Purification techniques involved column chromatography and recrystallization
- Characterization techniques included <sup>1</sup>H, <sup>13</sup>C, <sup>31</sup>P NMR spectroscopies, X-ray crystallography

**New York University, Department of Chemistry, New York, NY**

Bachelor of Science, Chemistry, December, 1998

First class Honors

- Developed, synthesized and characterized gold(I) phosphine based carboranes for potential use as anticancer agents in Boron Neutron Capture Therapy (BNCT)

**American Institute of Applied Science, Youngsville, NC**

Diploma in Forensic Science, August, 2005

- Subjects studied by correspondence include Crime Scene Investigation; Modus Operandi; Questioned Documents; Firearms Identification; Police Photography: Fingerprint Recording and Latent Print Development

## RESEARCH SKILLS

**Chemistry:** NMR spectroscopy, UV-vis, FTIR, ESI-MS, GC-MS, TLC, Column chromatography, recrystallization, Schlenk lines, argon glovebox

**Tissue Engineering/ Cell and Molecular Biology:** Primary mammalian cell culture, tissue explant, cell viability and proliferation assays, collagen hydrogel matrix preparation, Col-GAG mesh preparation, RNA and DNA isolation, qRT-PCR, semiquant RT-PCR, protein isolation, Western blot, immunocytochemistry, fluorescent and confocal microscopies, cell/ scaffold mechanical loading using DMA

**Computer Applications, (1) Software:** ChemOffice, QuantityOne, ImageJ, TA Universal Analysis, SDS qPCR Analysis, FluoView; **(2) Databases:** SciFinder Scholar, Genbank, BLAST, MultAlin

**AWARDS****McGill University, Department of Surgery, Montreal, QC****October 2001 – April 2002*****International Resident Fellowship***

- Synthesis and characterization of scandium(III) and yttrium(III) based organocomplexes
- Used argon glovebox and swivel frit glassware for oxygen exclusion synthesis
- Characterization involved air sensitive  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectroscopy at ambient and variable temperatures

**PUBLICATIONS**

A New Chelating Anilido-Imine Donor Related to the B-Diketiminato Ligands for Stabilization of Organoyttrium Cations. J.G. Hanes, U.C. Wolsh, D. X. Emslik, M. Ramakrishnan, W.E. Piers, M. Parvez, *Organometallics*, **2003**, 22, 1577

N-Allyl-N-(2-nitrobenzenesulfonyl)-L-phenylalanine methyl ester, Sally-Anne Hukster, Mihak Ramakrishnan, Michael K. Twinson, *Acta Crystallographica Sect. E.*, **2003**, E59, o967-o968

(2-Bromophenyl)diphenylphosphine, Hank L. Williams, Mihak Ramakrishnan, Teresa V. Uklm, Michael K. Twinson, *Acta Crystallographica Sect. E.*, **2002**, E58, o419-421

(2-Chlorophenyl)diphenylphosphine, Hank L. Williams, Mihak Ramakrishnan, Teresa V. Uklm, Michael K. Twinson, *Acta Crystallographica Sect. E.*, **2002**, E58, o306-o307

**TEACHING EXPERIENCE****Boston University, Boston, MA****2006**

- Taught graduate students how to maintain general cell culture, design a controlled experiment incorporating biological samples, develop 3D collagen hydrogel experiments, extract RNA and DNA from mammalian cells, acquire and analyze qRT-PCR data, image live cells and bacteria using fluorescent microscope, image live cell populated 3D collagen scaffolds using confocal microscope, prepare agarose for electrophoresis DNA gels, functionalize carbon nanotubes

**McGill University, Montreal, QC****2003-2005**

- Taught graduate students how to isolate mammalian primary cells via tissue explant techniques
- Taught graduate students how to maintain general cell culture
- Wrote protocols for multiple pieces of laboratory equipment and experimental designs to allow future students to learn independently

**New York University, New York, NY****1999-2002**

- Tutored classes of 30-40 students for a first year chemistry course
- Taught laboratory sessions of 20-30 students for first year chemistry, 2<sup>nd</sup> year organic chemistry, 2<sup>nd</sup> year inorganic chemistry

**PROFESSIONAL ASSOCIATIONS AND CONFERENCES**

"Methods in Bioengineering" mtg, Cambridge, MA, July 2006

"New Developments on Polymers for Tissue Eng., Replacement and Regeneration" mtg, Funchal, Portugal, June 2006

Wound Healing Society mtg, Scottsdale, AZ, May 2006

Wound Healing Society mtg, Chicago, IL, May 2005

Brisbane Inorganic Chemistry Symposium, Brisbane, QLD, Australia, April 1999

First Singapore Chemical Conference, Singapore, November 1998

Wound Healing Society (WHS), member since March 2005