

# John Wieners

## Lead Electronics Engineer, extensive experience in Medical Devices, In-Vitro Diagnostics and Automation

Morrisville, PA - Email me on Indeed: [indeed.com/r/John-Wieners/7ce4bc078c18525d](https://indeed.com/r/John-Wieners/7ce4bc078c18525d)

Dedicated electronics engineer with a strong background in team management, circuit design, layout and testing. Experience in motion control, digital and analog design, and imaging systems.

### Core Competencies:

- \* Team Management
- \* Circuit Design & Layout
- \* Motion Control/Automation
- \* Embedded Systems
- \* Medical Device Regulations
- \* Design for Manufacturing
- \* Design for Serviceability
- \* LabVIEW Programming
- \* Imaging Systems
- \* Project Management
- \* Touch Screen Interfaces
- \* ESD Testing & Debugging

### WORK EXPERIENCE

#### Principal Engineer, Electronics

Abbott Point of Care - In Vitro Imaging Systems - Princeton, NJ - April 2009 to Present

Led a team of six engineers to develop the electronics for an imaging-based hematology instrument capable of performing a Complete Blood Count (CBC) in a Point of Care environment. Worked closely with other disciplines, including Mechanical, Software and Optics Engineers, Quality, Regulatory, Marketing and Program Management.

#### Projects & Experience:

##### Electrical Engineering Department Management

- \* Managed department tasks and priorities for a team of six engineers with experience levels ranging from Associate to Principal Engineer.
- \* Selected suppliers for electronic components, including circuit boards, custom cable assemblies, single board computers, and LCD screens.
- \* Worked with program management and other engineering groups on project planning and scheduling.
- \* Collaborated with the Materials, Quality and Regulatory departments to audit vendors, perform verification, create processes, and identify regulatory requirements.
- \* Built the Electrical Engineering department infrastructure, including setting up the electronics lab and selecting all tools, equipment and development software for the department.

##### Desktop Hematology Instrument

- \* Led the Electrical Engineering department to develop all electronics throughout the system, including circuit board design, touch screen interface and single board computer integration.
- \* Developed a communication architecture that allowed control of all sensors and actuators throughout the system via a simple I2C bus.
- \* Designed the power architecture of the system, integrating it with the power state machine of the embedded Intel single board computer.
- \* Identified devices used for operator identification, such as barcode readers and RFID readers.

#### Instrument Control Circuitry

- \* Developed circuits to perform tasks related to motion control, data acquisition and microscope illumination.
- \* Worked with Hardware and Software Engineers to develop algorithms for motion control and blood sample preparation.

#### SATA Camera Design

- \* Managed the development of a single-board camera that could communicate with a PC via a standard SATA interface.
- \* Developed system requirements, such as camera throughput, on-board image processing and cost.
- \* Worked with contractors to develop the camera, and coordinated with the Embedded Software and Optics teams on testing and system integration.

### **Associate Member, Technical Staff**

Sarnoff Corporation/SRI International - Princeton, NJ - April 2007 to April 2009

Developed cameras, test systems and support electronics for CCD and CMOS imagers. Used FPGAs, high speed drivers, and DC bias circuits to generate precision timing signals. Digitized high-speed video signals using correlated double sampling to minimize noise.

#### Projects:

##### CCD Camera Design

- \* Developed a single-board camera to drive an 8k CCD line array for customers to use as an evaluation board and reference design.
- \* Tested and debugged the system, including updating the FPGA design and soft-core processor firmware.
- \* Led the fabrication and testing effort for the first run of production boards.

##### CMOS Test System Design

- \* Designed adapter boards to interface with existing test-bed electronics in order to test new CMOS sensors.
- \* Developed timing schemes and test methods for CMOS sensors.

##### Iris Recognition System

- \* Developed system electronics to capture an iris image and transfer it to a computer for image processing.
- \* Designed circuit for controlling infrared LED's used for subject illumination.

### **Electronics Engineer**

Siemens Diagnostics - Flanders, NJ - February 2003 to April 2007

Developed electronics for an automated in-vitro diagnostic system for use in large blood testing laboratories. This was done with distributed microcontrollers controlling over eighty motors and associated sensors and actuators.

#### Projects:

#### Motion Control Circuitry

- \* Developed circuit boards from circuit concept to production documentation and bill of materials.
- \* Design for manufacturability and identify manufacturing test methods and requirements.
- \* Wrote software for microcontroller to verify design.

#### Image Processing System

- \* Investigated feasibility of using image processing in order to identify patient blood samples and gather information about test tubes (i.e. height, diameter, cap presence).
- \* Led interdepartmental team to determine requirements for a production version of the system based on customer needs, system cost, and physical layout.

#### I2C Network for Reset Control

- \* Implemented an I2C network to control the reset signals of approximately forty microcontrollers from a master control PC.
- \* Simplified cable routing and reduced system cost by reducing the number of conductors, overall cable diameter, number of circuit boards and total cable length.

#### EDUCATION

##### **Bachelors of Science in Computer Engineering**

Rochester Institute of Technology - Rochester, NY

1997 to 2002

#### SKILLS

Technical Experience:, Imaging Systems, Digital/Analog Design, Bus Communication, Data Acquisition, Motion Control, FPGA Design, \*\*\*, Programming Experience:, LabVIEW, C/C++, Java, Embedded Systems, Assembly Language, LabWindows/CVI, \*\*\*, Software Experience:, Mentor DxDesigner, Orcad Capture, Mentor PADS, Altera Quartus II, Microsoft Office, MasterControl