

Soper Research Group,  
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### 1. Optical Laboratory #1, Room 202 Choppin Hall

- Two color time-resolved NIR fluorescence microscope, system consists of a diode lasers (PicoQuant, Berlin, Germany) lasing at 680 and 780 nm. Detection capabilities in microdevices,
- NIR laser-induced fluorescence system. Microscope equipped with a 10 mW, 780nm excitation beam supplied by a GaAlAs diode laser (LT024MD/MF, Thorlabs, Newton, NJ) and single photo avalanche diode (SPAD) (SPM 200B Single Photo Detector, PicoQuant, Berlin, Germany). Detection capabilities in microdevices,
- NIR laser-induced fluorescence system, System consists of a diode laser (780 nm excitation beam). Detection capabilities in microdevices,
- NIR laser-induced fluorescence system, CW diode laser (670 nm excitation beam), LIF for SMD capabilities in microdevices,
- NIR laser-induced fluorescence system, microscope equipped with 633 nm laser. Detection capabilities in microdevices,
- Laser-induced fluorescence system, microscope equipped with 532 and 780 nm diode lasers. Detection capabilities in microdevices,
- NIR laser-induced fluorescence system equipped with CCD camera, scanning microscope for SMD. Detection capabilities in microdevices/microarrays. System equipped with 630 nm laser,
- High voltage power supplies (5), assembled in-house, each consist of 4 individual power supplies (Model UR5PN, Matsusada Precision Inc., Santa Clara, CA) capable of delivering +5 to -5 kV

### 2. Optical Laboratory #2, Room 235 and 237 Choppin Hall

- FluoTim 200 Time-Resolved Spectrometer (Pico Quant), Verdi 5W diode pumped Nd:YAG laser (coherent), Mira 900 Ti:Saph laser with short and mid wave optics for emission from 710-900 nm (coherent),
- NIR scanning microscopes (CW and PL), CW system equipped with 670 nm laser and PL with 780 nm laser, fluorescent imaging of arrays/microarrays,
- Jobin Yvon Horiba Fluorolog 3 -12, Single and double excitation measurements,
- Laser-induced fluorescence system, microscope equipped with 457 nm laser. Detection capabilities in capillary and microdevices.
- UV-Vis Spectrometer Pharmacia Biotech Ultraspec 4000
- High voltage power supplies (2), assembled in-house, each consist of 4 individual power supplies (Model UR5PN, Matsusada Precision Inc., Santa Clara, CA) capable of delivering +5 to -5 kV

### 3. Molecular Biology Laboratory Room 204 Choppin Hall

- Beckman-Coulter Capillary Array, Model CEQ™ 8000 Capillary Array Genetic Analysis System. Beckman Coulter, Inc., Fullerton, CA
- ABI Sequence Analyzer, 310 Genetic Analyzer, Perkin Elmer Four color DNA Analyzer
- Li-COR IR<sup>2</sup> DNA Analyzer, Equipped with NIR dual laser system (685 and 785 nm), Li-COR, Inc. Biotechnology, Lincoln, NE,

- Kodak Logic Gel Imaging System, Equipped with 1D image analysis software, Eastman Kodak Company, Rochester, NY,
- Slab Gel Electrophoresis Systems with electrophoresis power supply, Bio-Rad Laboratories, Hercules, CA
- 5 x 96-well Thermal Cyclers, Eppendorf Mastercycler and Mastercycler EP Gradient, Genius and TC-412, Techne Inc., Minneapolis, MN; Perkin Elmer Gene Amp PCR System 2400
- Eppendorf Concentrator, Model 5301 Eppendorf,
- Eppendorf Centrifuge, Model 5415C Eppendorf
- Eppendorf Refrigerated Centrifuge, Model 5417R
- Hybridization Oven, Boekul Bambino 230300,
- Isotemp waterbath, 180 Series (Precision)
- Workstation Hood AIRCLEAN Systems AC 600LFUV

#### 4. Wet Chemistry Laboratory Room 233 Choppin Hall

- 2x Agilent Capillary Electrophoresis Systems, Equipped with absorbance detector,
- DNA/RNA Synthesizer, Applied Biosystems 394, 4 standard and 4 speciality bases,
- HPLC System, Single channel fluorescence and PDA absorption detector. (Jasco),
- Potentiostat/Galvanostat, Model 2263-1 (Princeton Applied Research,)
- SPR Biacore X, Biacore, Piscataway, NJ

#### 5. Microscopy Laboratory Room 204A Choppin Hall

- Zeiss Axiovert 200M Inverted Microscope, Microscope equipped with a JAI CV 252 monochrome video camera capable of capturing 30 fps and Axialcam MRM camera (high sensitivity and high resolution b/w still imaging). Microscope equipped with mercury lamp with 480 nm excitation.
- Nikon Optiphot 2 Microscope, Microscope equipped with 730 nm diode laser and Nikon DXM 1200 color camera (Nikon, Melville, NY)

#### 6. Microfabrication Facility Room 18 Atkinson Hall

- Computer Numerically Controlled (CNC) Milling Machine
- Hot Embossing Machine
- Laser Ablation System (Resonetics RapidX 1000 Series laser system) (Lumonics PM-848 UV excimer laser KrF (248 nm, 80W), ArF (193 nm, 30W), Max. repetition rate 200 Hz, Pulse duration 12-20 ns, Beam dimensions 10x25 mm<sup>2</sup>)