# Microscope Accommodations

### Possible Options

Digital microscopes

Microscope cameras

Projection microscopes

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### Microscopes Connected to Computer

DIGITAL HIGH POWER MICROSCOPES
The compound microscopes below all come with a USB digital imaging system that
captures microscope images, displaying them LIVE on your PC. Using the
user-friendly software included, which is compatible with Windows 98/2000/XP/Vista,
you can edit microscope images in the same way as you use PhotoShop. You can
conduct measurements across images, record videos, share images, and save them
in BMP, TIFF, JPG, PICT, PTL and other formats. You can measure lengths, angles,
areas and etc. These microscopes are made by the same technicians and on the
same production line as optical instruments for Leica, Zeiss, Nikon and Olympus. They
are brand new in factory box.

<http://www.amscope.com/DigitalHP.html?gclid=CJCgjL7zuKgCFQxvbAodPEsABQ>

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## Microscope Cameras

Microscope Digital Camera 1000 from Home Science Tools ($400.00)

USB Digital Computer Microscopes (from $30)

### Dino-Eye and Dino-Lite

Dino-Eye AM423 - 1.3 MP Digital Microscope Camera ($269.00)

* **1.3 Megapixel Resolution**
* **Live Imaging**
* **Measuring Software**
* **Accurate Color Resolution**
* **Affordable Price**

The Dino-Eye microscope cameras are produced by the same manufacturer as the Dino-Lite handheld digital microscopes. As with the Dino-Lite microscopes, the software is simple to use and characterized by remarkably accurate color resolution for such a simple camera. The measuring software is suitably robust and live imaging is possible although only at 640 x 480 resolution - not full screen. Still capture is at full 1280 x 1024 pixel resolution.

There are three USB 2.0 models designed to fit different oculars:

* **AM423 - fits 23.2mm ocular**
* **AM423X - fits 23.2mm, 30mm and 30.5mm oculars with included adapters**
* **AM423U - fits over 35mm eyepiece**

There is also a TV/AVI output model:

* [**AM422N - TV/AVI**](http://www.microscope.com/dinolite-am422n-eyepiece-camera-output-p-789.html)

**DinoCapture Software**

The DinoCapture software is easy to use, intuitive and with included measuring software. The software enables full-speed, live imaging at 640 x 480 resolution and image capture of still photographs, video or time-lapse. DinoCapture permits drawing, live text editing and measuring.The measuring function allows the user to input the magnification value from the microscope's zoom control and then to measure the length, angle, and circumference of the specimen.  Both linear and geometric measurements can be captured quickly and easily. For more accurate measurements, the software can be calibrated using a known scale (such as a ruler).

### OptixCam

## **OptixCam Summit and Pinnacle Series** microscope cameras:

## High quality images

## Excellent color resolution

## Fast refresh rates

## Robust measuring software

## Four microscope attachment options

All cameras are C-Mount with three additional attachment mounts for different microscope ports - 23.2mm, 30mm and 30.5mm.

**SUMMIT CMOS SERIES:** The **OptixCam Summit Series** offers five CMOS versions - 1.3 MP, 1.3S MP high speed, 3.1 MP, 5.0 MP and now 9.0 MP.

**NEW 2010! PINNACLE CCD SERIES:** The **OptixCam Pinnacle Series** offer three versions. The 1.4 MP monochrome, 3.3MP and a Peltier-cooled version, the 3.3MP ICE. All Pinnacle series cameras include a robust aluminum case for protection.

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### More Microscopes

Video microscope: <http://www.viewsolutionsinc.com/products/M-LCD.htm>

Video microscopes: <http://www.opticsplanet.net/digital-microscopes.html>

LCD video microscope: <http://www.diytrade.com/china/4/products/7439341/LCD_Digital_Microscope_LDM_EV5610.html>

Other models: <http://www.diytrade.com/china/4/products-list/0-k-c-1/LCD_microscope.html>

And at the top of the line: <http://gradientlens.com/videomicro.asp?gclid=CLj81Z7Q4KcCFU9pKgodR0zN-Q>

Microscope attachment: Intel Play QX3 Computer Microscope.

 No longer manufactured by Intel

 Feeds microscope images directly into the computer

Microscope Digital Camera 1000 from Home Science Tools ($400.00)

### Projection Microscopes

<http://www.projectionmicroscope.com/>

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### Helpful Links:

<http://www.microscopeworld.com/>

<http://barrier-free.arch.gatech.edu/>

<http://www.schooltr.com>

<http://www.as.wvu.edu/~scidis/vision.html#sect4>

<http://www.washington.edu/doit/Stem/articles?359>

<http://www.microscopesandmore.com/kenvisionproj.asp>

<http://www.flexiblecamera.com/>

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### Tips from AT Staff

Muriel Parenteau

I am in possession of the Ken a vision demo product you sent me.

I tried it this morning with a microscope used on the campus in the Microbiology lab and a 17" laptop computer. The Dept Chair of Biology and a computer technician assisted.  The camera was working fine when not attached to the microscope.

Once attached to the microscope, we found that the focal point of the slide shifts when placing the HD camera on the eyepiece of the microscope.  The Chair of the science dept was unable to get a clear picture of the slide using the camera and he has years of experience using the microscope!

Re-adjusting the focus and the focal point again and again was determined to be much more time consuming than the low vision student could handle.

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Mark T. Sakata, MS, CRC

At my previous college, I used a Scalar USB camera. There is an optional c-mount that allows you to connect the camera to a standard microscope in place of the eye piece. This allows you to achieve the higher magnifications native to microscopes that are used in the microbiology labs. You can view the image on a Win or Mac platform via USB, and capture single frames, movies and time lapse sequences.

The image capture capabilities would also benefit individuals who require extra viewing time as a testing accommodation. An entire test could be made ahead of time.

One vendor that sells this product is School Technology Resources <http://www.schooltr.com>

Hope this helps. Please let me know of other solutions that you find work well.

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Carole Duffin [Carole.Duffin@dc-uoit.ca]

I had a similar situation with a low vision student. Solution was a microscope (stereo microscope for this student) plus digital camera combo which then connected to her laptop. She is able to view the enlarged image from her laptop. The stereo microscope is a Leica SMZ1000 with digital camera. The compound microscope is an Olympus CX41.

Hope this helps!

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Ron Stewart

Two options here: Slave a flex-cam to the microscope or use a digital microscope which has an output for an external monitor. They are very common these days they are used for large group presentations of microscope work.

Attaching a FlexCam to the Ocular of the microscope:

<http://www.microscopeworld.com/MSWorld/SearchResult.aspx?CategoryID=222&gclid=CIyt2NWr7JACFQSHHgodxUFrQg>

Digital Microscope that allowed the student to do the manipulations with a computer interface:

<http://www.microscopeworld.com/DigitalMicro/SearchResult.aspx?CategoryID=112&gclid=CKj5zvGr7JACFQMlHgodLTklQg>

Our Biology faculty still do a lot of microscope work and expect their students to do so as well.

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Maria Pena

There is a device called the Carson Digital Microscope—you connect it via a USB port to a laptop and the images are magnified 26-130X — it comes with three blank slides, one prepared slide, forceps, eye dropper and USB cable and software—I saw it for about $99 awhile back.

Also I found this toy (Eyeclops) on Amazon.com that is like a cheap Clearview – the price is $39.00 – I do not know if you could adapt it for academic purposes but for that price it would be worth a try.

* See at 100, 200, and 400 times magnification
* Three times the fun of the original Eyeclops
* Explore a world of wonder by simply plugging into your TV with Jakks Pacific’s famous Plug It In & Play technology…now with three times the fun!
* Bionic Eye evolves with a powerful, new feature to expand kids’ worlds: an adjustable multi-zoom lens with 100x, 200x and 400x magnification
* See how amazing everything looks under three different magnifications directly on your TV

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JD

I had great luck with a microscope/adapter/camera that hooks up to a computer. Can't remember the exact model number, but I believe it's made by Ken-a-Vision, and distributed by Troxell Communications Inc. We paid about $900 for it and the Biology dept. loves it—we can’t get it back!

Check out those two websites, there are a number of devices that should fulfill your needs.

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Allan Chen

I found a couple of microscope-camera systems that are, indeed, quite pricey. Maybe $4000+. I also found a couple of relatively inexpensive eye-piece replacement systems. I have no idea on quality of video, and I don't think they have as much flexibility with zooming and image size (ie - you'll just need to use a bigger TV).

An example is <http://www.greatscopes.com/minivid.htm> or it's slightly more expensive brother <http://www.greatscopes.com/biovid.htm>

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Anonymous

I have approached this in a couple of different ways, by attaching a FlexCam to the Ocular of the microscope <http://www.microscopeworld.com/MSWorld/SearchResult.aspx?CategoryID=222&gclid=CIyt2NWr7JACFQSHHgodxUFrQg>

Then we purchased a Digital Microscope which allowed the student to do the manipulations with a computer interface.

<http://www.microscopeworld.com/DigitalMicro/SearchResult.aspx?CategoryID=112&gclid=CKj5zvGr7JACFQMlHgodLTklQg>

## OLD Attachment Still Sometimes Available

Microscope attachment: Intel Play QX3 Computer Microscope.

 No longer manufactured by Intel

 Feeds microscope images directly into the computer