

## *Course Description* **Digital Photography as Input for Wide Format Printing**



FLAAR's staff with Joe Catalano, showing a panoramic of Lake Atitlan, Guatemala.

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Bowling Green State University of Ohio in cooperation with FLAAR

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Open enrollment, via web-based training (you do not have to be resident; you can take this course from anywhere in the world).



We anticipate the course to begin roughly February 7<sup>th</sup> or 10<sup>th</sup> 2002. Since this is entirely based on training from Bowling Green State University (BGSU) + FLAAR via the Internet, you do not have to attend any classroom in Ohio.

However, Professor Hellmuth will attend the PMA tradeshow in Orlando February 25-27. He will make himself available two sessions at PMA (either two mornings, or two afternoons, or morning one day, afternoon the next day). That way you can stick with him in order to meet all the digital camera professionals. He will arrange sessions for you at all the pertinent booths so you can learn the entire range of digital camera technology, CCD and CMOS: entry level, SLR 35mm level, medium format studio level, and tri-linear scanning backs for large format. This visit will include complete introduction to large format inkjet printers (including archival inks and photographic media), high-end scanners, as well as digital cameras themselves.

This course will also include visits to booths displaying lenses, lighting (tungsten, HMI, strobe, flash, and digital-fluorescent) accessories and all pertinent related camera equipment which we can find.

This session at the tradeshow will also include book reviews: the leading publishers of books on photography equipment will be exhibiting. PMA visit will also include discussion of RIPs: the brains that make large format inkjet printers do all their tricks. Color management booths include the three biggest names in color management: X-Rite, Monaco, and GretagMacbeth. At present, attending the PMA tradeshow is not required, but is highly recommended. However, if the number of applicants for the BGSU + FLAAR digital photography training exceeds the limited number of positions available in the training program, then we will probably upgrade the tradeshow visit to a requirement in order to insure that you have personal familiarity with the key cameras and pertinent large format printers together with Professor Hellmuth to "translate" the advertising hype into something realistic.

## Introduction

This course is the first installment in a long-term commitment of Bowling Green State University (BGSU) of Ohio to utilize the experiences in wide format inkjet printing recently brought to the BGSU campus by the art photography research institute, FLAAR. FLAAR was in the forefront of museum-quality, traditional studio, and location photography before digital imaging even existed. This experience means that the new course can empathize with traditional photographers who have a background in 35mm, medium format, and large format photography, as well as non-photographers who also need to move into the shifting sands of the digital millennium.



College of Technology, Bowling Green State University of Ohio

## Course Abstract



We attend trade shows to take notes on all the newest digital cameras. Here, PhotoExpo East, November 2001

This course provides step-by-step instruction of how to produce digital photographs that contain optimal resolution for impressive output with wide format printers. To incorporate a good mix of learning how to handle a digital camera together with specific features of Adobe Photoshop exclusively dedicated to digital photography, this course will be divided into the following 4 sections:

- A major portion of the course will be directly on digital cameras, lenses, sensor technology, digital accessories, lighting, etc.
- Digital photography in the studio as well as out on location
- Once you learn how to take good digital images the course will guide you to which aspects of Adobe Photoshop will make them even better
- A component of the course will introduce you to how to prepare the image for printing on a large format printer

## Target Audience

This course is intended for people who wish to learn how to successfully utilize appropriate digital camera systems for preparing images to print using any standard, wide format inkjet printer, 24" to 74" in width. However, this course is also appropriate for people who need to produce the absolute top quality with a Xeikon or Indigo-type digital printer.

This course is appropriate for the following professions:

- Artists (fine art giclee)
- Curators of any kind of museum
- Graphic Designers
- Photographers, intermediate level and up
- Leisure and prosumer photographers who aspire to produce large format size
- Geologists and geographers who need to print GIS combined with photos
- In-house corporate graphic staff
- IT staff
- Architects
- Engineers who need to print CAD combined with photos
- Theater design staff for backdrops and costumes
- Television station set designers
- Textile designers for proofing textiles
- Realtors who need to produce excellent images
- Instructors who themselves wish to use, or teach, digital photography

- Professors who either need to prepare images for wide format or prepare to teach digital photography
- Students of all levels in any of the above fields who need to learn advanced digital photography

This course is also appropriate for individuals in the following industries:

- Advertising agencies
- Sign shops that specialize in POP signs
- Quick print shops
- Reprographic shops
- Prepress
- Proofing
- Courtroom graphics is another area where the quality of display graphics may win a court case
- Government agencies
- Hotel companies
- Travel agencies
- Tradeshow graphics



BetterLight equipment at FLAAR Guatemala

## Course Objectives

Students enrolled in this course should have the following goals:

- Understand why and in what aspects an original digital photograph may produce a better result on a large format printer than would a scanned negative (and vice-versa in other circumstances)
- Understand how the quality of a digital photograph can equal the quality of a traditional darkroom photograph, and in what circumstances this is not so
- Learn which type of digital sensor will produce the types of photographs you and/or your company need to print. Once you know the capabilities of each distinct type of digital sensor, then you can make an appropriate selection of a make and model of digital camera (remembering that every camera has some good features, and those same good cameras have a few weak points).
- Be able to make the best use of a camera you already have to produce at the quality that you need
- Be able to make a decision on choosing a printer that will meet your needs. You will also realize what accessories, software, inks, and inkjet materials to consider.
- Be able to go to any tradeshow or camera store (or wide format printer dealer), and understand the jargon, distinguish advertising hype from reality, and be able to make an educated selection of equipment. You will have enough glossaries available to you so that you will be able to read, and understand, even the most arcane report on these subjects and at least know where to go to get help with the definitions.
- Know which aspects of Adobe Photoshop you need to concentrate on either with practice or through a subsequent course. You will also receive instruction on what after-market software is a good companion for Adobe Photoshop, and which digital asset management software can keep track of all your images.

## Research and Preparation undertaken to prepare this course for you

We conducted a survey of roughly 90% of the photography courses available in the USA. Much to our surprise, out of several hundred universities, community colleges, institutes, museums, or photography schools, less than 3-dozen actually offered a course even labeled as digital photography.

The majority of courses that were advertised as “digital photography” turned out to be introductory courses primarily on scanning (which is not digital photography). In the few courses where a digital camera was discussed, only about 10% of the course was dedicated to the camera; 90% of the course was on Adobe Photoshop—teaching students how to repair bad scans. Again, the rubric of “digital photography” has been improperly assumed to cover scanning traditional film and then imaging the resultant scans.

Of the rare instances when a course was really on digital cameras and actual digital photography, probably seven or fewer offered a program in large format digital photography. Courses on inkjet printing were even rarer.

In distinction, BGSU will offer a unique course, not a generic course on scanning and Adobe Photoshop (which you can find almost anywhere). This course by BGSU + FLAAR is dedicated to showing how your digital photography can be (and definitely should be) good quality from the moment of image capture. Your photography skills should be so good



Betterlight panoramic equipment on location

that you rarely need to use Adobe Photoshop (other than to resize the image for final printing). Obviously, in real life this goal is elusive, but nonetheless, this course seeks to prepare good quality digital photos to begin with, straight from the camera.

This goal implies needing to learn which digital cameras are best for producing these ideal images. It turns out that the brand name is not always the relevant aspect; what you need to learn is which of the several competing technologies is best for your specific needs.

## Course Content

The emphasis of this course is medium format and large format digital scan backs for studio photography, including product photography, museum photography, landscape photography, portrait photography, architectural photography, scientific photography, as well as photography of art of all sizes and shapes.

However, very recently a new generation of 5 megapixel CCD sensor made it possible to accomplish basic large format printing with a point-and-shoot digital camera costing less than \$1,000. Five years ago a camera of this nature would have cost \$28,000. This course is now adding coverage of economical point-and-shoot digital cameras, but only at prosumer level, with the newest generation of 5 megapixel cameras as a starting point. Examples include Sony DSC-F707, Minolta DiMAGE 7, Olympus E-20N, and Nikon CoolPix 5000.

This course will also point out the potential of digital photography as input for exotic kinds of inkjet printing in addition to the enlargement of basic photographs. Dye sublimation, both heat transfer from paper with Sawgrass dye sub inks as well as wax and resin coated dye sub inks (Summa, Matan, etc.) will also be included. This course also introduces photographing for printing on metal foil (aluminum, gold, silver) on solid metal (via dye sub transfer). Nowadays, actually there are printers that can print directly on thick and rigid objects up to half an inch thick.



We know of one wide format printer that can print on objects up to 3 inches thick, including bricks, stone, wood, even glass. There is another inkjet printer which prints onto leather and onto doormats or rug sections (yes, even onto pile rugs).

Emphasis will primarily be on ColorSpan, Encad, Epson, Hewlett-Packard, Mimaki, Mutoh, Roland, inkjet printers, 24" and wider, though the course is equally applicable to digital imagers such as Durst Lambda and Cymbolic Sciences Lightjet. Although the emphasis is on wide format printers, it is natural that if you have only a tabloid sized printer, such as Epson 1520, Epson 2000, Epson 3000, Epson 5000, Epson 5500, one of the newer Hewlett-Packard 10ps, 20ps or 50ps, or Canon 8500, that you will also learn how to produce better photographic and fine art giclee prints as a result of this course. If you do not yet have an inkjet printer at all (none is required; you can take the course without owning either any camera nor a printer), we do not recommend that you buy a printer or camera until you have all the evaluations that will be available to you as a participant in this course. For example, two of those Epson printers listed above are poorly designed with serious deficiencies; yet one of that tabloid-sized series of Epson printers is excellent and we recommend it. So surely you might like to learn which printers to avoid, and which printers are worthy of your consideration.

### **What this course does not intend to cover**

Above we listed the first thing this course does not cover, namely physics (the insides of computers and the inner secrets of voltage inside a digital camera) and chemistry (the hidden recipes inside inkjet ink and in the diverse layers of inkjet media). Yes, we cover how things work, and yes, we cover the different inks and media (as introduction to large format printing, remembering this is a course on digital photography for printing, not on printing of digital photos).



Nicholas Hellmuth (right) with Joe Tarsia (left) and his impressive tti repro stand for large format digital cameras. PhotoExpo East in the Kodak booth.

Elaboration of the above: this course will lead you up to, and indeed into, large format printing, but is not a primer on the use of specific brands of printers, nor a primer on color management (we do provide plenty of information on which color management tools you need, however).

This course is applied science (how to use equipment), not how to increase the dynamic range of the left photo site out of six million photo sites on a new generation CCD.

Since there are over a dozen 3-to-5-megapixel cameras, a dozen very complex medium format scan backs, and four exceedingly complicated tri-linear scanning backs, we are obviously unable to provide a training manual in each specific camera. We will tend to select a sample of each range (such as Nikon CoolPix 5000 for 5 megapixel group and BetterLight 6000 for the tri-linear class) and feature them. There is a good chance we will have a medium format scan back in house as well. But mainly we will discuss the cameras as a class: what performance can you expect from each group, and how will it affect your business, positively and negatively, if you have x, y, or z make or model of camera. So more of a business-plan kind of discussion, since we notice that so far most of the course applicants are from business. In other words, you need to understand which camera is best for your business. Plus, how much can we produce if our budget only allows x, y, or z class of digital camera. So please do not ask us how to do macro-focusing on the Widget 4000 camera.

You will notice that nowhere do we discuss scanning or scanners. That is because this is a course on cameras, lenses, and photography.

Ironically, Professor Hellmuth's original background in digital imaging is precisely in scanning (of 35mm, medium format, and large format on flatbed scanners and film scanners). It is precisely because of his interest in scanning that this subject has been kept separate. Scanners will be covered in additional courses, possibly by February 2003. As editor of three of the largest educational Web sites on large format printing, you can guess that he will cover these topics, but as a separate course. BGSU wishes to keep each subject as a module since these courses are extremely labor intensive (and hence costly) to prepare.

Additional topics not included:

- This course is not intended to cover digital snapshots for the low-resolution Web usage, such as family photography of the kids and pets
- This course is not intended to cover digital photography for use with desktop inkjet printers at letter size
- We will indeed introduce dye sub and thermal autochrome digital printers (photo size, namely postcard size), but this course is not otherwise dedicated to such small sizes

- Since Durst, Cymbolic Sciences, ZBE Chromira are indeed wide format, we will cover how to achieve good input for those printers. But those, and their desktop equivalent, the excellent Fujifilm Pictography, are not inkjet, although we cover their size class, we do not cover the internal technology of LED printers.
- We can gladly recommend sources relative to desktop publishing with laser printers, and how to print photographs with laser printers, but this course is not dedicated to desktop publishing. Our introductory course at Francisco Marroquin University would be more appropriate for desktop printing.
- Video frame capture is not covered since resolution is inadequate for enlargement
- Although there will be readings on color management, discussion of color management, glossaries of terms of color management, and lists of precisely what tools, software, and consultants can take care of your digital photography and/or your needs for color management in wide format printers, this course itself does not otherwise teach color management per se.
- Since digital QTVR is for web-use primarily, the files are not large enough to print on large format inkjet printers. Hence digital QTVR photography is not covered in this course, but is covered in the summer version at Francisco Marroquin University. See [www.ctpid.ufm.edu.gt/](http://www.ctpid.ufm.edu.gt/) for the summer course.

### Course Delivery

This course is intended to be delivered via Blackboard software, the premier educational software for Web-based learning. In this case you will be provided access at no extra charge. We would post each week's readings, discussions, and PDF reports on that site and arrange for discussion with Professor Hellmuth. However, we are also considering providing information via a participants-only area of one of the FLAAR Web sites where only you have access.

The majority of the learning experience will be guided reading and research. Much of the reading will come from the students' own excursions into their local library and the Internet, using search engines to find pertinent Web sites. Although they will get a considerable head-start from Web sites already provided by the instructor, they will also be expected to acquire additional information on their own.

We wish to emphasize that since the majority of the people taking this course are mature individuals, and that you will need to have a bit of self-initiative in your reading assignments. You will need to go out on the Internet search engines and gather certain information. We have already gone out ourselves and have an impressive bibliography of resources, right down to the specific Web sites and individual pages within those sites. Still, you will need to read this material as well as go out on your own and find even more. Your instructor will naturally be available to let you know which materials you find are up to date and which are not. Actually, even some of the professional camera Web sites have an occasional error (as probably do our own sites).

Due to the unique nature of this course (digital cameras, digital camera use, and actual digital photography), it is a pilot course. It is rather obviously a challenge to teach certain aspects of digital photography long-distance via web-based training. But you will definitely know much more at the end of the course than you knew in the beginning, and that's what counts.

Practice makes perfect that this practice you can easily do on your own: you will have the full course material available by that time.

## Course Schedule

The course itself is intended to begin roughly February 7<sup>th</sup> to 10<sup>th</sup>. There will be occasional periods when your instructor is away consulting both nationally and internationally, or attending seminars. This is why at present we do not have a fixed schedule for the precise end-date of the course. A one credit university course is 45 hours. However, we will more likely run this at double that; first of all, to insure that you receive the background we are dedicated to providing; second, since this course is unique in its dedication to true digital photography and that combined with large format inkjet printing. Overall, we anticipate running the course during February and March. If there is a tradeshow in April (such as ISI, Orlando, early April), we could use that as a final summary.

## Course Requirements for you

### Hardware and Software

- A computer
- Either Mac or PC
- Capability for reading TIF files on a CD
- 256 MB RAM is minimum, 512 MB is better, maxed out at 1 GB RAM is even better
- Several GB of free hard drive space

### A method of transferring images, one of the following:



- CD burner, CD-R or CD-RW
- DVD-RAM
- DVD-ROM
- ZIP (CDs are much better though)
- We do not use Jaz disks

### Internet access

- 56K modem is preferred since you will need to do considerable reading and research on the Internet
- E-mail account at convenient location and convenient times

### Adobe Photoshop

- Full version preferred
- Version 6.0 preferred
- Version 5.5 minimum

One of the textbooks appears to have a mini-version of Adobe Photoshop included in the CD that comes with the book. If this has enough functions, it would allow you at least to get started.

## Microsoft Word

### Mac

- Version XP (2002)
- Version 2001
- Version 98

### PC

- Version XP (2002)
- Version 2000
- Version 97

There may be instances when having software to distill a PDF file helps. The downside of working with a PDF file is they are awkward to edit while in that format; or at least I can edit them more easily in MS Word. Thus, we will not yet have Adobe Acrobat full version as a requirement. Actually, you can distill into a PDF from Adobe PageMaker.

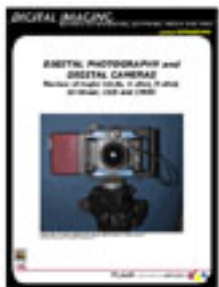
We realize that QuarkXpress is an industry standard and that Adobe InDesign is another option. However, we tend to use Adobe PageMaker, and for the purposes of this course, MS Word should be more than adequate.



Both platforms PC and Mac are used at each FLAAR facility. Here, working with PosterJet RIP for large format printers

## Digital Camera

The students do not have to own a camera, but will need to at least borrow one during the course. If they do not have one yet, they should wait until the course starts since we will discuss all the pros and cons of various makes and models. We will provide information to assist the students in their eventual choice.



Digital camera specifications:

- 3 megapixels minimum
- 5 to 6 megapixels preferred
- Off-camera flash option preferred
- Capability for manual override preferred
- Serious photographers use 1-shot, 3-shot, or tri-linear scan backs

## Equipment Recommended but Not Required

- A printer to print out reading assignments
- Laser will be much faster than a desktop inkjet
- B+W laser printer is adequate though obviously color has advantages
- However, you can go to any Kinko's or comparable and print color when necessary

## Prerequisites: what background or preparation do you need to have

You will need to already know basic Photoshop. It would be tough to teach you basics of Photoshop from the absolute beginning. Indeed, what makes this BGSU+FLAAR course unique is that it's not a course on basic Photoshop hiding under a pseudo-title of "digital photography."

If you are clever, you can learn Photoshop really quickly on your own. But don't attempt this unless you have a lot of spare time. If you are working two jobs plus family, please don't try learning Photoshop from scratch during the course period unless a co-worker, spouse, or your kids will work on Adobe Photoshop with you several hours a day.

We will, however, most definitely show you the portions of Adobe Photoshop that a digital photographer needs to know. At this point again, it's your own practice, practice until you can do it in your sleep.

That's how we learned it. You, however, have an advantage. There are excellent books available today, combined with a photographer-instructor (Hellmuth) to provide a plan and a schedule.

You need to know how to operate a computer; Mac is preferable but PC is quite good as well; we use both at FLAAR at both universities. Since this course is dedicated to teaching you about digital photography, it is not required that you have background in this.

This course is NOT a course on physics or chemistry of CCD sensors nor on software code. Instead this is on applied knowledge: how to apply digital photography to your job. You do not need any technical background in physics or chemistry to take this course. If there are too many applicants (which is now the case) then we may have to set other entrance requirements to limit class size.

## Resources provided by FLAAR at BGSU: material already prepared for you

FLAAR has 51 titles of reports in Adobe Acrobat PDF format on digital imaging of which at least 20 are pertinent to this course. These reports are illustrated with photographs from tradeshow as well as equipment in FLAAR facilities. Reports vary from 2 page fast-facts



FLAAR staff member at BGSU with a batch of software recently arrived for FLAAR programs.

to 20 page reports. FLAAR has hundreds of pages on its digital photography and printer Web sites already. Brochures from the Camera and Printer Companies In some instances, the brochures of manufacturers and/or distributors contain outstanding illustrations and informative text, and we will seek a reasonable means to provide these brochures to students. The literature of Rodenstock (large format lens company in Germany) is an example of a brochure that is as good as, if not better than, some textbooks.

### Opportunities to Consult with Digital Photography Guest Experts

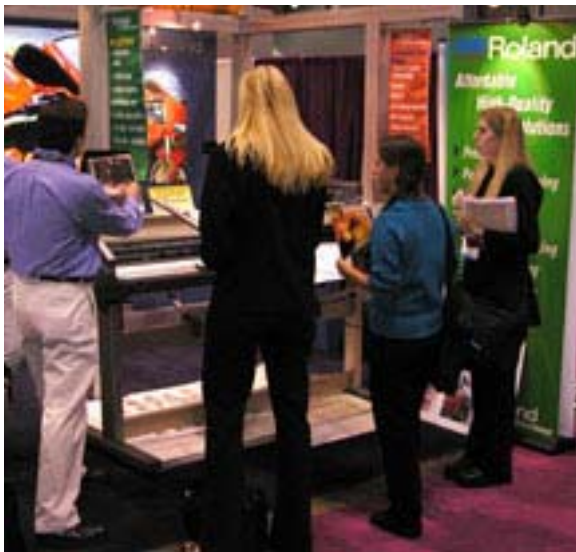
Because FLAAR at BGSU's [www.digital-photography.org](http://www.digital-photography.org) is a recognized contributor in the world of digital photography, it will be possible to attract guest experts to be available to answer questions, either during discussions, via e-mail, or in some instances directly on the phone (during pre-arranged discussion times dedicated to the expertise of the guest speaker). However, there is no way you can possibly duplicate the experience of visiting PMA tradeshow the last days of February. These two days will be worth the entire cost of the overall course.

### Video Resources

Receiving video over the Internet is not yet a functioning technology unless you have a T3 line or at least T1 or similar. However, if we find video programs on digital photography we will list them as additional resources.

### Tradeshows

FLAAR editors inspecting the Roland printer at Print'01



There are a series of tradeshows that feature digital photography and also wide format printers. Although attending a tradeshow is not required, it is highly recommended. Professor Hellmuth will provide 6 hours of instruction via a guided visit during each tradeshow: 3 hours one day; an additional 3 hours the next day.

- Graphics of the Americas tradeshow is Feb 1-3 in Miami
- PMA tradeshow is in Orlando, Feb 24-27
- DPI tradeshow, March 6-9, Palm Springs, California
- ISA Expo 2002 tradeshow, April 4-6, Orlando
- B.I.G. tradeshow, May 2-4, Columbus, Ohio.

Plenty of wide format printers albeit not many or any digital camera displays. But you could in theory combine a visit to B.I.G. and BGSU (which is half hour south of Toledo).

## Additional Course Information

### Class Enrollment and Credit

It is not required that students have an affiliation with a college or university to enroll in this course. If you absolutely need course credit we can see if the paperwork can be arranged. There would be one price as a 1 or possibly 2 hour credit course via BGSU. So far, most of the people who have shown interest in the course are people already out in the real world working. This is why we decided tentatively to offer the course as a regular training program. This also lowers the price somewhat, namely a price as non-credit, where you attend the class (via the Internet) as you would any seminar, conference, or other program of instruction.

So far, everyone who has signed up for this course is not a “student” any more but already out in the real world working. Thus we won’t have to worry as much about homework and grading and all that.

### Cost

We checked around to see what other universities and institutes charge:

- One place offered a six day course at a tuition of \$895, plus a lab fee of \$200 = \$1,095 for a week. The lowest program at this institute was \$720 total for a single week.
- Another photography school charged \$1100 for a week. Their Web site did not reveal what a longer course might cost.
- A third institute charged \$925 plus digital lab fee of \$95 just for Photoshop for photographers, \$1,145 for how to print digital photographs and actually did not really have a real course on digital photography (only on how to use Photoshop).

Why the high price: all the above institutes are basically commercial. FLAAR is a non-profit educational institute and BGSU is a state university. Our goal is education, not a commercial business. We just need to cover the actual costs of preparing and delivering the course. Preparation has been intensive and several staff members are part of the team assisting Professor Hellmuth.

During the months of preparation of this course, Professor Hellmuth’s staff searched every other university and photo school they could find. Virtually no course was fully on digital photography with a digital camera. Instead, courses were on scanning and imaging, but merely labeled as digital photography. We could not find a single course which featured large format inkjet printing either.

The BGSU + FLAAR program is pure digital photography along with tips on Adobe Photoshop and an introduction to inkjet printing. We have established a cost of \$700 since the program will actually last over at least two months (no, obviously not all day long, and you can take the course from your home, your office, or even while on vacation). We will see whether the university here takes credit cards or how to arrange sign up and payment.

If it becomes possible to print out some of our course material in color, you may have the option of buying a hard-copy printout, but this is not mandatory. There may occasionally be PDF files that would be available for purchase as well, but we will do our best to keep them optional.

Most of the textbooks you can probably get from any on-line bookstore. We have not arranged to get commissions on those sales. Since the prices are already discounted, we doubt there would be much commission left to tempt anyone.

The tradeshow visit is optional at present, but is looking more and more likely to be added as a requirement; it is considered a personal expense. There is, however, no additional BGSU-FLAAR cost for you to take advantage of Nicholas Hellmuth's two day personal guidance at the tradeshow. You will be joined at the tradeshow by many of the FLAAR staff from Francisco Marroquin University, the other university where Hellmuth also teaches advanced digital imaging. In other words, you cover your airfare and per diem (which hopefully your company will invest in) and BGSU + FLAAR provides Professor Hellmuth. You naturally also get all the rest of the training during February and March too.



Michael Collette, inventor of the BetterLight tri-linear scanning (left) with Professor Hellmuth (PhotoExpo East)

### Assignments and Activities

- Chats, e-mail exchanges and discussion groups
- Case studies based on participant's own field trips; this implies self-initiative
- Reviews of material obtained from participant's own research in their local library and Internet research
- Projects (resulting from research and case studies) and a final project

### Possible Subsequent Courses

Digital Photography as Input for Wide Format Printing is part of a trilogy. Each portion is scheduled and priced separately. There is no requirement that you take more than one component.

The second component is "Scanning for Input for Large Format Printing" that will be initiated in autumn 2002 or February 2003.

Subsequent courses will include color management, inkjet colorants and media, and a host of related subjects. However, in most cases, the initial entry-level focus will always be input. You will not achieve good output if you are only concerned about your printer, your inks, media, and color management. All that knowledge comes to nothing unless you have usable input. A good print starts with a good digital photograph.

These courses will lay the groundwork for color management, but are not in themselves yet a course on color management. However, we will offer a considerable array of assistance for those who wish to move into this next stage. Indeed, a future course which BGSU and FLAAR will offer will be "Introduction to Color Management: Scanner and Digital Camera through Output on Inkjet and Related Wide Format Printers." Since color output is dependent on media and ink, this future course will include a discussion of ICC color profiling, how to generate your own, what tools are necessary (X-rite, Gretag, etc.), how to use them, and what other software also allows proofing with means other than ICC profiles.

### Direct Access to Nicholas Hellmuth



FLAAR staff at BGSU using the recently arrived Cruse digital camera, the only \$97,000 digital camera in Ohio that we know of.

Professor Hellmuth will personally teach this course. Yes, naturally his staff will handle many aspects, especially signing up and all the paperwork. Staff and assistants will handle the portions of the course dedicated to Photoshop for photographers, but based directly on supervision by the professor. Nicholas Hellmuth will be available at the PMA tradeshow in Orlando; he will also be available at BGSU should any of you wish to visit the university. This is not required, but at least you could see the Cruse digital camera in action, all \$97,000 of it; this is the absolute top of the

line model of this camera. It was shipped from Germany in four giant crates, and took six days to install (at a cost of \$6,000 just to install and calibrate it).

One designated e-mail address will be assigned for this course. Once this e-mail is set up, we ask that you not use any of the other FLAAR e-mail addresses. Anything and everything you send to the new designated e-mail will be read, and answered, during course meeting hours and during "office hours."

One designated telephone number will be assigned for this course. This way you can speak to Professor Hellmuth in person. We will have certain hours during the workday (for those who can call from work) and other hours during evenings (for those who should not call from their workplace). There will be set hours for him to be at this phone. These hours will be posted on the course's Web site. We ask that you do not use his home phone, nor his regular BGSU office phone for this course.

There will be a few weeks when Professor Hellmuth is at his other university in Guatemala (during BGSU's spring break, March 11-17). During these times access to him will primarily be via e-mail, as long-distance telephone calls get a bit pricey. Occasionally he goes to remote areas for digital photography on location; some of these areas, even in the USA, have no e-mail access, but usually such a location shoot is just for 3 days.

## Signing Up

Since this is a new course at Bowling Green State University the signup sheet is still being prepared by the department of continuing education. However, since there is no requirement that you be a student in the traditional sense, the course description is more important than the course number.

This course is being developed by FLAAR within the Center for Applied Technology, Joe Catalano, Director, College of Technology, Bowling Green State University of Ohio. Thus applications, which are a bit informal at this stage, should come to the e-mail [FLAARtest@aol.com](mailto:FLAARtest@aol.com). If you wish to fax, try our direct fax # 419 372-8283.

We ask that for the moment you not telephone, since Professor Hellmuth is off consulting with a photography company and then attending meetings at the other university where he also teaches digital photography in the summer, Francisco Marroquin University (UFM). The difference is that the BGSU course is intermediate to advanced, whereas the UFM course is introductory level to intermediate. The UFM course is in-person in Guatemala; the BGSU course is world-wide via the Internet.



Joe Catalano, director , College of Technology, Bowling Green State University

A sign-up form will be posted by late January. You will be able to pay Bowling Green State University of Ohio by credit card or check. We hope to have this form by the last week of January. But don't worry, you are pre-entered already on the rooster (at no obligation, but at least a place is saved for you should you wish it).

FLAAR Digital Imaging Technology Center

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**Course material will all be in English; however you can correspond en español oder auf Deutsch.**