Minutes

Present: Amasino, Ansari, Bednarek, Butcher, Clagett-Dame, Cleland, Craig, Friesen, Hayes, Hoskins, Kiessling, Landick, Mitchell, Nelson, Palmenberg, Raines, Rayment, Record, Reed, Senes, Sussman, Welbel, Wickens, Wildonger

Absent: Attie, Cox, Fox, Holden, Kimble, Markley, Martin, Ntambi, Pagliarini, Pike, Ralph

Ms. Craig called the meeting to order.

1. The Future of BIF – Landick
   Mr. Landick led the discussion on efforts by the “Future of BIF” Committee (Landick, Hoskins, Martin, and Raines) to determine how to rejuvenate BIF to meet the current and future needs of researchers in Biochemistry and others on campus. A copy of the Committee’s proposal is attached to these minutes.

   Mr. Landick made a two-part motion, seconded by Mr. Raines, as follows:

   1. Spend $2.5M of WARF endowment funds to acquire modern biophysical equipment for shared facilities housed in the Department of Biochemistry and to renovate these facilities.

   2. Set aside $9M within the WARF endowment from which the income will be used to pay staff and maintain or acquire equipment in shared biophysics facilities housed in the Department of Biochemistry.

   After further discussion, Mr. Cleland proposed to move the question, which was seconded by Mr. Sussman. The motion passed with 22 in favor, none opposed, and 1 abstention.

2. Activities of the Postdoctoral Training Committee – Landick
   Mr. Landick opened the discussion by stating that many universities have a campus office that supports their postdocs (fellowship application feedback, future professional opportunities, mentoring, seminars), but that UW-Madison does not. There was consensus that such an office would be beneficial and the idea should be pursued.
3. Activities of the Art Committee – Nelson (for Attie)
   Mr. Nelson proposed that Biochemistry invite artist Carol Bjerke to display a "cancer survivor" art / science exhibit starting in February. Mr. Landick seconded the motion, which passed with 21 in favor, 2 opposed, and no abstentions.

4. Activities of the IPIB Steering Committee – Rayment
   Mr. Rayment stated his intent to use future Faculty Meetings to keep the faculty apprised of the activities of the IPIB Steering Committee and to gather their input. He and Mr. Friesen provided an update on the thesis lab assignments for the incoming class of 2012. Additional topics for discussion in the near future include the graduate curriculum and greater faculty involvement in student recruitment.

5. Joint Recruiting between Chemistry and IPIB – Weibel
   Mr. Weibel reported that he is working with the Department of Chemistry (Helen Blackwell) in recruiting graduate students interested in chemical biology. He encouraged faculty – especially chemical biologists – to be available to meet with applicants during the February and March recruitment weekends.

6. Development of new seminars – Rayment / Mitchell
   This topic was deferred to the January Faculty Meeting.

The meeting was adjourned.

Respectfully submitted,

[Signature]

Elizabeth A. Craig
Department Chair
Proposal to Rejuvenate BIF and Launch an Biochemistry Optical Core (OC)
Using Biochemistry Endowment Funds

"Future of BIF" Committee (R Landick, A Hoskins, T Martin, R Raines)

Background
The Biophysics Instrumentation Facility (BIF; www.biochem.wisc.edu/bif) in the Department of Biochemistry was founded in 1997 by Ron Raines and a group of UW faculty in Biochemistry, Chemistry, and Pharmacy who needed Biophysics instrumentation. The group procured equipment grants from NIH and NSF to equip the facility and an initial commitment from CALS to pay a full-time Facilities Manager. Darrell McCaslin was hired and continues to manage the facility. BIF currently houses capabilities for Spectroscopy, Analytical Ultracentrifugation, Calorimetry, MALDI-TOF Mass Spec, Light Scattering, and Surface Plasmon Resonance (Table 1) in ~2250 sq ft of space on the ground floor of the 1985 wing (Fig. 1). Much of the instrumentation is old; some is nonfunctional; repair is increasingly; and new generations of biophysical instruments have expanded the trajectory and power of biophysics, including increasingly sophisticated in vivo measurements at even single-molecule resolution. A survey of BIF users reveals high interest in new instrumentation, including super-resolution and other advanced capability microscopes, and a desire for greater outreach and training and improved physical space to allow the BIF to meet the current and future needs of researchers in Biochemistry in related basic Life Sciences at UW. Biochemistry funds in WAF can be put to work to meet these departmental and campus needs without detracting from other high priority uses of WAF funds.

Proposal
We propose that Biochemistry leverage a minor portion of its WAF funds through a combination of outright expenditure and assignment of interest from principal (see Budget below) to accomplish two overall purposes:

- Modernize the BIF with updated capabilities and a second staff scientist to address unmet needs.
- Add an "Optical Core" with state-of-the-art Super-res & Confocal Microscopy as a sister facility to the BIF.

To accomplish these purposes we propose the following specific steps.

1. Hire a second BIF scientist reporting to the Officer-in-Charge of BIF (now Raines) with the following duties.
   - engage in outreach, educational, and training efforts to improve use of the BIF by researchers in Biochemistry and in the UW Bioscience community.
   - create and maintain an on-line instrument sign-up system.
   - create and maintain an accounting system that provides readily accessible and up-to-date information.
   - train and aid users on a subset of instrumentation to free time for the BIF manager to maintain instrumentation and devote more time to training and assistance other instruments.
   - contribute to grant applications for future BIF equipment and enhancements.

2. Renovate the BIF space (see Fig. 1) to modernize the labs, accommodate new instrumentation, and create an Optical Core.

3. Purchase new high-priority BIF equipment (see Table 2).

4. Recruit and hire a microscopy scientist who will direct the Optical Core, with the following main duties.
   - maintain instruments in the Optical Core and help researchers optimally use them.
   - engage in outreach, educational, and training efforts for the Optical Core.
   - assist in identification and testing of new instrumentation as appropriate.
   - contribute to grant applications for future Optical Core equipment and enhancements.

5. Designate a faculty Officer-in-Charge of the Optical core to whom the microscopy scientist will report.

6. Purchase a super-resolution microscope and eventually other microscopes for the Optical Core.

7. Designate funds to pay for instrument upkeep and repair.
Advantages of Implementing BIF/Optical Core Plan
The BIF/Optical Core plan has the following chief advantages for the Department of Biochemistry.

- A modernized BIF and Optical Core will strengthen research in the Department, increase our competitiveness for extramural funding, and enhance our teaching mission.

- A modernized BIF and Optical Core with increased external use will earn the Department good will for generosity in use of its WARF endowment.

- A second BIF scientist hired now will immediately address crucial needs for outreach, training, and greater access for the BIF.

- A modernized BIF/Optical Core will make the facility a more pleasant environment in which students and others can use biophysical equipment not present in individual labs.

Budget
Accomplishing this plan will require two types of WARF fund expenditures: outright expenditure that will draw down the principal, and (2) designation (sequestration) of portions of the principal from which interest payments can be used for recurring costs.

<table>
<thead>
<tr>
<th>Component</th>
<th>Direct Cost to Endowment</th>
<th>Recurring Annual Cost</th>
<th>WARF Funds Sequestered for Annual Costs (at 4.5% Income)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Update current BIF instrumentation(^1)</td>
<td>$625K</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Two Optical Core Microscopes(^2)</td>
<td>$1.3M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Renovations to BIF</td>
<td>$500K</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Salary for 2(^{nd}) BIF Scientist</td>
<td>$142K (w/fringe)(^3)</td>
<td>$3.16M</td>
<td></td>
</tr>
<tr>
<td>6. Salary for Optical Core Scientist</td>
<td>$142K (w/fringe)</td>
<td>$3.16M</td>
<td></td>
</tr>
<tr>
<td>7. Service Contracts &amp; Repair</td>
<td>$100K</td>
<td>$2.23M</td>
<td></td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>$2.425M</strong></td>
<td><strong>$384K</strong></td>
<td><strong>$8.54M</strong></td>
</tr>
</tbody>
</table>

\(^1\)See Table 2.
\(^2\)See Table 3. A reasonable plan will be to purchase only one microscope immediately, and the second once the Optical Core Scientist is able to participate.
\(^3\)Assumes ceiling of $100K salary over time. Initial cost should be less. Savings in early years can go toward service contracts and equipment costs during time in which new hires are building a user base and achieving expertise for grant writing.

Table 1. Current BIF Instrumentation

*Voyager DE-Pro MALDI-TOF Mass Spectrometer (Applied Biosystems)*

*XL-A Analytical Ultracentrifuge (Beckman Coulter)*

*Cary Bio400 UV/Vis Spectrophotometer (Varian)*

*Model 2025F Circular Dichroism Spectrophotometer (Aviv Biomedical)*

*QuantaMaster Model C-60/2000 Spectrofluorimeter (Photon Technologies International)*

*Infinity AR60 Fourier-Transform Infrared Spectrophotometer (ATI Mattson Instruments)*

*VP-Isothermal Titration Calorimeter (MicroCal)*

*VP-Differential Scanning Calorimeter (MicroCal)*

*BioRad ProteOn XPR36 Protein Interaction Array System (Biacore replacement)*

*DAWN Multi-angle Laser Light Scattering (Wyatt Technology)*

*N4-Plus Dynamic Light Scattering (Beckman Coulter)*

*AVS 310 Capillary Viscometer (Schott Gerate GmbH)*

*DMA5000 Density Meter (Anton Paar USA)*

*equipment to be replaced.
Table 2. Proposed New Instrumentation for BIF

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Cost (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Dynamic and Static Light Scattering Instruments</td>
<td>$150K</td>
</tr>
<tr>
<td>e.g., <a href="http://www.wyatt.com/solutions/hardware">http://www.wyatt.com/solutions/hardware</a></td>
<td></td>
</tr>
<tr>
<td><a href="http://www.malvern.com">http://www.malvern.com</a></td>
<td></td>
</tr>
<tr>
<td>New MALDI-TOF Mass Spec</td>
<td>$350K</td>
</tr>
<tr>
<td>e.g., ...</td>
<td></td>
</tr>
<tr>
<td>New Multiwell plate readers</td>
<td>$125K</td>
</tr>
<tr>
<td>e.g., Tecan M1000; <a href="http://bit.ly/wGeV6v">http://bit.ly/wGeV6v</a></td>
<td></td>
</tr>
<tr>
<td>Tecan F500; <a href="http://bit.ly/QTEQww">http://bit.ly/QTEQww</a></td>
<td></td>
</tr>
</tbody>
</table>

Table 3. Possible Microscopes for the Optical Core

<table>
<thead>
<tr>
<th>Microscope</th>
<th>Fixed Cell</th>
<th>Super-Res</th>
<th>Live Cell</th>
<th>TIRF</th>
<th>Confocal</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nikon SIM</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>$650K</td>
</tr>
<tr>
<td>DeltaVision OMX</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>$750K</td>
</tr>
<tr>
<td>Nikon STORM</td>
<td>+</td>
<td>++/++</td>
<td>In TIRF mode/ not hi-res</td>
<td>+</td>
<td>-</td>
<td>$250K demo</td>
</tr>
<tr>
<td>Nikon SIM/STORM</td>
<td>++</td>
<td>++/++</td>
<td>In SIM mode</td>
<td>+</td>
<td>-</td>
<td>$865K</td>
</tr>
<tr>
<td>Leica STED/GSTED</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>$750K-$1M</td>
</tr>
<tr>
<td>Leica GSDIM</td>
<td>+</td>
<td>++</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>$500K</td>
</tr>
<tr>
<td>Zeiss Elyra PALM/SIM</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+$350K</td>
<td>$865K</td>
</tr>
</tbody>
</table>

Comments:
Expressed needs for microscopy:
Conventional fixed cell or GFP fusion protein work: standard epi or confocal
Fixed cell at super-resolution
Live cell/organism imaging in epi or TIRF mode with super-resolution

How to meet these needs: two high end microscopes with multi-functionality

Nikon SIM with TIRF: multiple modes; live cell imaging ~$600K+
Deltavision OMX with TIRF: multiple modes; live cell imaging ~$750K

Nikon STORM equipped with TIRF ~$333K (25% discount for demo at WID)
Nikon SIM/STORM ~$865K

Leica STED/GSTED: confocal or super resolution with live cell imaging: ~$750-1000K
Leica GSDIM: STORM for super resolution in TIRF or epi; not live cell: ~$500K

Zeiss Elyra systems: PALM/SIM ~$850K with confocal (+$350K) not recommended for live cell
Figure 1. Space currently used by BIF or available for BIF/Optical Core Renovation.

AND FIRST OF 2010 -
NORTH AREA
Bioimaging: Domains and Dimensions

In anticipation of currently planned opening of the biomedical imaging exhibit “Beyond the X-ray” traveling from Boston Museum of Science to Madison in fall of 2013, we propose to develop and run a series of pre-exhibit and post-exhibit events and activities related to bioimaging and bioimaging-linked concepts allowing the exploration of bioimaging from different angles including scientific, artistic and cultural aspects, with involvement and participation of various members of diverse scientific, biotech-industrial and artistic communities from UW, city of Madison and WI. We invite all interested faculty, staff and department members and members of biotech and artistic communities to participate in planning, organizing and running these activities.

These series aim to:

- To inspire and capture public curiosity about upcoming exhibit on bioimaging
- To introduce main bioimaging concepts to various public groups and segments of populations, including on campus, city-wide and state-wide
- To consolidate history and scientific achievements in the field of bioimaging with practical issues of medical bioimaging, developed at UW, by Wisconsin-related industry and globally
- To create a venue for discussion of practical, medical, scientific, cultural, artistic and aesthetic aspects and values of bioimaging on personal and societal levels
- To involve various groups into interdisciplinary dialogue about general and specific aspects of bioimaging, to create new collaborations and projects

Possible “domains of bioimaging” may include:

- Biological imaging (molecules, cells, organs, organisms, neuroimaging)
- Medical and physical bioimaging (technology, advancements, safety, body imaging)
- Artistic exhibits and performances related to bioimaging
- Sociological and philosophical aspects of bioimaging and its perception, etc.

where “dimensions” may reflect changing the scale of objects in bioimaging from sub-atomic, molecular and cellular levels to organismal, populational, environmental levels including societal and global effects.

As an inaugural part of this project, we propose to develop and run first interdisciplinary science-art exhibit “Cancer Research and Treatment through the Lenses of Art and Science” (running title “Art and Science of Cancer”) at the Biochemistry New Addition first floor gallery.

The proposed exhibit space will be divided in two parts. First part will include series of images ENSO developed by Carol Bjorke, Madison-based professional artist-photographer related to her journey through treatment, healing and recovery from colon cancer. The second part will highlight UW-based cancer-related research including treatment and prevention by presenting visual images of cell lines including fluorescent, confocal and electron microscopic images of cell, organelles, extracellular matrix and chromatin structures, etc. used in cancer research provided by UW Laboratory for Optical and Computational Instrumentation. The images will be mounted on the walls of the gallery using existing mounting fixtures and will include a short inscription of the image-related research project.

The structure of the exhibit will allow the creation of genuine “art meets science” space to present art and academic research combined as a unique approach to educate public and to inspire new generation of students and scientists to consolidate their efforts in a field of biochemistry, genetics, molecular and computational biology related to cancer biology, research and treatment.

Contacts: Dave Nelson nelson@biochem.wisc.edu, Olga Trubetskoy olga09@gmail.com
PROPOSAL FOR EXHIBITION IN THE BIOCHEMISTRY ADDITION:

Stretching the length of the several segments of the long south wall to the west of the atrium will be an eye-level row of 11" x 11" framed black and white photos from the ENSO piece, along with information to describe their inspiration, medium, and content. (see draft of text below)
The attached jpeg shows these photos in a 6-foot-high by 20-foot-long grid, but for this new presentation they will be side by side in a single row, occupying a total of 110 linear feet of wall space. (No benches. Please disregard those in the photo.)
Since this piece represents one year of medical care, the long line is an appropriate suggestion of the collection of data imagery over time.

ENSO

ENSO is a term borrowed from the Japanese word for circles drawn or painted in the Zen tradition.

Circles of enlightenment.

Marks that record one’s being here now.
In this moment as it is.
For the TIME/BEING.

ENSO calendar.
Zen in the art of ostomy maintenance.

The ENSO meditation is part of a fifteen-year Art and Healing project done in response to treatment for colorectal cancer. This most recent chapter includes photographs of supplies used by a person living with an ostomy.

For a period of one year, I had a mini photo studio set up in my closet. Every three days while changing my ostomy appliance, I drew the circle of sealant and then photographed the prepared piece before placing it over my stoma to catch body waste. At the end of the year I had one hundred and twenty-two ENSO images to mark the rhythm of my existence.

No one really wants to talk about gastrointestinal issues. But the ENSO piece rises above mere acknowledgement of a gritty medical procedure, and transforms it into an object of beauty. Dialogue ensues as viewers respond to the artwork. Might this discussion contribute to finding new ways for addressing GI diseases?

2012 ENSO installation:
CAROL CHASE BJERKE

Born: 1943, Boston, MA
Studio and Residence: 5414 Greening Lane
Madison, Wisconsin 53705
Phone: (608) 238-3201
cleechasebjerke@mindspring.com
www.carolchasebjerke.com

SOLO EXHIBITIONS (Partial list)

2013  Hidden Agenda, The Cooler at Artisans Gallery, Paoli, WI
2011  Hidden Agenda, Marian Gallery, Mount Mary College, Milwaukee, WI
2009-10 Hidden Agenda, International Museum of Surgical Science, Chicago, IL
2008  Tourist in Eden, The Steenbock Gallery, Wisconsin Academy of Sciences, Arts and Letters, Madison, WI
2008  Tourist in Eden, The Center for Photography at Madison, Madison, WI
2005-6  Hidden Agenda Studio Installation, Madison, WI
2004  Life Boat/Life Savor, Aurora University Lake Geneva Campus, Williams Bay, WI
2004  The Photograph as Book, Kohler Art Library, University of Wisconsin, Madison, WI
1999  Life Savor, Saint Benedict Center, Madison, WI
1998  Life Boat, Sunroom Gallery, Madison, WI
1997  Up to Now, Water Street Gallery, Prairie du Sac, WI
1995  Kanopy, Inc., Madison, WI
1995  CitiARTspace, Madison, WI
1993  After the Fall, Leah Ransburg Art Gallery, University of Indianapolis, Indianapolis, IN
1988  Tourist in Eden, Central Michigan University, Mt. Pleasant, MI
1985  Saginaw Valley State College, Saginaw, MI
1985  Art Reach of Mid Michigan, Mt. Pleasant, MI
1983  The Gallery at Graphic Documents, Mt. Pleasant, MI
1980  Saginaw Valley State College, Saginaw, MI
1980  Mid Michigan Community College, Harrison, MI

INVITATIONAL AND GROUP EXHIBITIONS  (Partial list)

2012  Bookscapes: Lands Observed and Imagined, Kohler Art Library, Madison, WI
2012  How to Read a Book: an artists’ books reading room, Lawton Gallery, University of Wisconsin-Green Bay, WI
2012  Medium, Meditation, and Mu, Patrick Nagatani and Carol Chase Bjerke, Common Wealth Gallery, Madison, WI
2010  Untitled 17, CommonWealth Gallery, Madison, WI
2010  Cancer Stories... Art, Overture Center for the Arts, Madison, WI
2010  University Art Gallery 20/40/50 Anniversary Alumni Exhibition, Central Michigan University, Mt. Pleasant, MI
2009  Life through a Plastic Lens, Guenzel Gallery, Peninsula Art School, Fish Creek, WI
2009  j&5 at the Steenbock Gallery, Wisconsin Academy of Sciences, Arts, and Letters, Madison, WI
2009  Book as Sculpture, Brandstater Gallery, La Sierra University, Riverside, CA
2008-09  A Winter Walk through the Artists’ Book Collection, Kohler Art Library, Madison, WI
2008  Northern National Art Competition, Rhinelander, WI
2008  The Center for Photography at Madison at The Steenbock Gallery, Wisconsin Academy of Sciences, Arts, and Letters, Madison, WI
2008  Blooming Books, Kohler Art Library, Madison, WI
2008  The Art of Healing: Explorations of Women’s Health, The Gallery at the Duderstadt Center, The University of Michigan, Ann Arbor, MI
1992  Michigan Friends of Photography exhibition, Urban Park Gallery, Detroit, MI
1992  *Mid-Michigan Exhibition*, Midland Center for the Arts, Midland, MI
1992  *Focus '92* Biennial Photography Exhibition, Battle Creek, MI
1990  *Showcase II: An Exhibition of Works by Midland Artists*, Midland, MI
1990  Aquinas College, Grand Rapids, MI
1989-91  *Books and Bookends: Sculptural Approaches*, curated by Carol Barton, Bethesda, MD (a touring exhibition)
1989  *Photowork '89*, The New Gallery, Coral Gables, FL
1989  *Photo Invitational*, Art Reach Center of Mid Michigan, Mt. Pleasant, MI
1989  Delta College, University Center, MI
1988  *Photography Invitational*, Expono Gallery, Midland, MI
1987  *Toledo Friends of Photography Regional Exhibition*, Toledo, OH
1987  *Michigan Fine Arts Competition*, Birmingham Bloomfield Art Association, Birmingham, MI
1987  *Art in Scotland Exhibition*, Central Michigan University at Art Reach Center of Mid Michigan, Mt. Pleasant, MI
1986  *Focus '86* Biennial Photography Exhibition, Battle Creek, MI
1986  *Women's Art Registry of Minnesota National Exhibition of Contemporary Women Artists*, Minneapolis, MN
1986  *Photoimages Exhibition*, Paint Creek Center for the Arts, Rochester, MI
1985  *Photoimages Exhibition*, Paint Creek Center for the Arts, Rochester, MI
1985  *Alma College Statewide Print Competition*, Alma, MI (a traveling show)
1985  *Art-i-Gras Multi-media Exhibition*, Midland, MI
1984  *The Art of the Print: 15 Michigan Printmakers*, Saginaw Art Museum and Saginaw Valley State College, Saginaw, MI
1984  *Springfield Art Association National Print Competition*, Springfield, IL
1984  *Michigan Fine Arts Competition*, Birmingham Bloomfield Art Association
1984  *Michigan Chapter of Artists Equity Association Michigan/Ontario Exhibition*, Detroit, MI and Windsor, ON
1984  *Ann Arbor Art Association Statewide Print Competition*, Ann Arbor, MI
1984  *Photoimages Exhibition*, Paint Creek Center for the Arts, Rochester, MI
1984  *Mid-Michigan Exhibition*, Midland Center for the Arts, Midland, MI
1983  *Springfield Art Association Third Women in Art Exhibition*, Springfield, IL
1983  *Alma College Statewide Print Competition*, Alma, MI (a traveling show)
1982-83  The Detroit Institute of Arts Sales and Rental Gallery, Detroit, MI
1982  *Contemporary Women Artists of Michigan Exhibit*, Freeman Gallery, E. Lansing, MI
1982  *Springfield Art Association National Print Competition*, Springfield, IL
1982  *McCune Arts Center Multi-media Exhibition*, Petoskey, MI
1982  *Springfield Art Association National Print Competition*, Springfield, IL
1982  *Alma College Statewide Print Competition*, Alma, MI (a traveling show)
1981  *Mid-Michigan Exhibition*, Midland Center for the Arts, Midland, MI
1981  Michigan Chapter of Artists Equity Association at Lansing Art Gallery, Lansing, MI
1981  *Ninth Annual Juried Exhibition of Prints and Drawings*, Second Street Gallery, Charlottesville, VA
1980  Michigan Chapter of Artists Equity Association at Detroit Focus Gallery, Detroit, MI
1980  *Capitol City Arts Exhibition*, Lansing, MI
1980  *Scarcab Club of Detroit Michigan Photography Exhibition*, Detroit, MI
1980  *Lansing Art Gallery Photography Competition*, Lansing, MI
1979  *All Area Photo Exhibition*, Saginaw Art Museum, Saginaw, MI
1979  *Michigan Photography Exhibition*, Traverse City, MI
1978  203 First Studios and Gallery, Clare, MI
1977  *Mid-Michigan Exhibition*, Midland Center for the Arts, Midland, MI
1999 Print Auction catalogue, Houston Center for Photography, Houston, TX.


"Artist Carol Chase Bjerke will be featured . . .," The Sauk Prairie Eagle, Sauk Prairie, WI, August 14, 1997.

"CWCCA Newsletter Gallery" featured artist, Update, Central Wisconsin Women’s Caucus for Art, Madison, WI, September, 1996.


"Clare artist’s work displayed," The Clare Sentinel, Clare, MI, February, 1984.

"Clare photographer to display works, Morning Sun, Mt. Pleasant, MI, November 11, 1983.


### EMPLOYMENT AND RELATED EXPERIENCES (Partial list)

<table>
<thead>
<tr>
<th>Years</th>
<th>Position/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976 - 2012</td>
<td>Self-employed artist and educator</td>
</tr>
<tr>
<td>2012</td>
<td>Guest Lecturer, University of Wisconsin Continuing Studies “Art &amp; Creative</td>
</tr>
<tr>
<td></td>
<td>Writing Therapy: Follow the Image” workshop, Madison, WI</td>
</tr>
<tr>
<td>2011</td>
<td>Guest Lecturer, Medical College of Wisconsin, Milwaukee, WI</td>
</tr>
<tr>
<td>2008 - 2012</td>
<td>Steenbock Gallery Coordinating Team, Madison, WI</td>
</tr>
<tr>
<td>2005 - 2011</td>
<td>UW School of the Arts at Rhinelander Advisory Team, Madison, WI</td>
</tr>
<tr>
<td>2010</td>
<td>Guest Lecturer, Loyola University Chicago, Chicago, IL</td>
</tr>
<tr>
<td>2010</td>
<td>Instructor, Creativity Workshop for Professional Photographers, Madison, WI</td>
</tr>
<tr>
<td>2003 - 2008</td>
<td>Gallery coordinator, The Center for Photographer at Madison, Madison, WI</td>
</tr>
<tr>
<td>1998 - 2008</td>
<td>Instructor, University of Wisconsin School of the Arts at Rhinelander, WI</td>
</tr>
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<td>1995 - 2008</td>
<td>Instructor, Wisconsin Union Mini Courses, Madison, WI</td>
</tr>
<tr>
<td>1994 - 2008</td>
<td>Instructor, The Center for Photography at Madison</td>
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<tr>
<td>1994 - 2004</td>
<td>Guest lecturer, Images Gallery, Chicago, IL</td>
</tr>
<tr>
<td>2004</td>
<td>Instructor, Elderhostel program at Aurora University Lake Geneva Campus, Williams Bay, WI</td>
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<tr>
<td>2003</td>
<td>Instructor, Madison Area Technical College</td>
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<td>2000 - 01 and 2003</td>
<td>Instructor, Madison Senior Center, Madison, WI</td>
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<tr>
<td>2002</td>
<td>Adjunct Faculty, Upper Iowa University, Madison Center, Madison, WI</td>
</tr>
<tr>
<td>2002</td>
<td>Instructor, Whitewater Community Education Program, Whitewater, WI</td>
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<tr>
<td>2001-02</td>
<td>Instructor, Valley Ridge Art Studio, Muscoda, WI</td>
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<tr>
<td>1997 - 2002</td>
<td>Education Coordinator, The Center for Photography at Madison, WI</td>
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<tr>
<td>1997 - 2001</td>
<td>Co-founder and Board of Directors, The Center for Photography at Madison, WI</td>
</tr>
<tr>
<td></td>
<td>(Board President, 1997 – 2000)</td>
</tr>
<tr>
<td>2001</td>
<td>Instructor, Peninsula Art School, Fish Creek, WI</td>
</tr>
<tr>
<td>2000</td>
<td>Instructor, Artistry Creative Enhancement Center, Mayville, WI</td>
</tr>
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<td>2000</td>
<td>Guest lecturer, LaFollette High School, Madison, WI</td>
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<td>2000</td>
<td>Guest lecturer, University of Wisconsin, Whitewater, WI</td>
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<td>1999</td>
<td>Guest lecturer, Madison Senior Center, Madison, WI</td>
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<td>1997</td>
<td>Photography instructor, Edgewood College, Madison, WI</td>
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<tr>
<td>1997</td>
<td>Photography instructor, Monroe Street Fine Arts Center, Madison, WI</td>
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<tr>
<td>1992 - 97</td>
<td>Instructor, Elderhostel program, Central Michigan University at St. Ignace, MI</td>
</tr>
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<td>1995</td>
<td>Guest lecturer, University of Wisconsin, Madison, WI</td>
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<tr>
<td>1995</td>
<td>Guest lecturer, Edgewood College, Madison, WI</td>
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<tr>
<td>1994 - 95</td>
<td>Set photographer and performer, KirOga Theatre, Madison, WI</td>
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<tr>
<td>1989 - 93</td>
<td>Adjunct faculty, Central Michigan University, Mt. Pleasant, MI</td>
</tr>
<tr>
<td>1981 - 82 and 1993</td>
<td>Instructor, Mid Michigan Community College, Harrison, MI</td>
</tr>
<tr>
<td>1988 and 1991 - 92</td>
<td>Photography instructor, Delta College, University Center, MI</td>
</tr>
<tr>
<td>1988 and 1991 - 92</td>
<td>Photography instructor, Midland Center for the Arts Studio School, Midland, MI</td>
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<tr>
<td>1991</td>
<td>Photography workshop at Art Reach of Mid Michigan, Mt. Pleasant, MI</td>
</tr>
<tr>
<td>1991</td>
<td>Artist-in-Residence, &quot;Not Just Vanilla&quot; children's dance and creativity program,</td>
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<tr>
<td></td>
<td>Midland, MI</td>
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<tr>
<td>1989</td>
<td>Guest lecturer, University of Michigan, Ann Arbor, MI</td>
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<tr>
<td>1985 - 88</td>
<td>Graduate Teaching Assistant, Central Michigan University, Mt. Pleasant, MI</td>
</tr>
<tr>
<td>1976 - 1980</td>
<td>Co-founder of 203 First cooperative studio and gallery, Clare, MI</td>
</tr>
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### EDUCATION

<table>
<thead>
<tr>
<th>Year(s)</th>
<th>Institution/Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>MFA in Photography, Central Michigan University, Mt. Pleasant, MI</td>
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<tr>
<td>1976</td>
<td>BA in Art, Central Michigan University, Mt. Pleasant, MI</td>
</tr>
<tr>
<td>1963 - 64</td>
<td>University of New Hampshire, Durham, NH</td>
</tr>
<tr>
<td>1961 - 63</td>
<td>Bates College, Lewiston, ME</td>
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Improving Campus Support of Postdoctoral Training at UW Madison

Most top-tier research universities operate a dedicated postdoctoral scholar’s office to aid career development among their postdoc community (e.g., Stanford’s or Yale’s Office of Postdoctoral Affairs; Berkeley’s Visiting Scholars and Postdoc Affairs). Postdocs are a linchpin of success for any modern research university; increasingly, these offices ensure competitiveness for extramural research funding, help meet federal and foundation expectations for postdoctoral training, and raise job prospects for postdoctoral trainees. A recent Science editorial highlights the need for improved postdoctoral career planning at US universities.

In contrast, UW-Madison lacks a campus-wide Office of Postdoctoral Affairs, although SMPH has recently established an Office and some information is provided by the Graduate School. Instead, postdoc support groups have been self-organized, piecemeal, and supported by departments (e.g., PALS, Badgerdocs, Chemistry Postdoc group). This situation not only disadvantages the professional development of postdocs at UW Madison, but it also has begun to make individual postdoctoral grants more difficult to obtain because the lack of a dedicated office is viewed as weakness during application review.

To solve these problems, discussions with informal campus postdoc groups have produced the following proposed actions:

• SMPH has established a postdoc office. However, it is not designed to help all postdocs on campus. We would like to see this office expanded to include all postdocs in the biological, medical, chemical, and engineering sciences. Alternatively, a dedicated postdoc office should be established within the Graduate School. The energy of self-organized groups should be channeled to develop events and functions relevant to postdoctoral training, but the burden for sustainment of these efforts should be assumed by UW Madison rather than falling on postdocs who turnover frequently.

• The Science editorial highlighted the need for individual development plans (IDPs) for Ph.D. students and postdocs. A UW-Madison postdoc office should promote the use of IDPs and aid professional development of postdocs on campus. The Graduate School Seminar Series is designed for graduate students, and does not meet the needs or address the situation of postdocs.

• Because postdocs are not considered students at UW, resources available to other campus student organizations are not available to postdoc organizations. Postdoc groups need assistance to maintain websites as well as email addresses and a web presence on UW IT system, and access financial resources to better serve the needs of postdocs (e.g., host outside speakers of particular interest to postdocs).

• The existing postdoc groups (PALS, Badgerdocs, Chemistry Postdoc group) find that new postdocs often don’t know of their existence. Attempts by some of these groups to seek a more visible presence on UW Madison web sites have not been successful. A UW Madison postdoc office should help publicize these groups.

5. Northwestern Office of Postdoctoral Affairs; http://www.tgs.northwestern.edu/post-docs/
Planning Career Paths for Ph.D.s

THERE WAS A TIME NOT SO LONG AGO WHEN NEW SCIENCE PH.D.S IN THE UNITED STATES WERE expected to pursue a career path in academia. But today, most graduates end up working outside academia, not only in industry but also in careers such as science policy, communications, knowledge brokering, and patent law.* Parly this is a result of how bleak the academic job market is, but there is also a rising awareness of career options that Ph.D. scientists haven't trained for directly—but for which they have useful knowledge, skills, and experience. Still, "there is a huge disconnect between how we currently train scientists and the actual employment opportunities available for them,"† and an urgent need for dramatic improvements in training programs to help close the gap. One critical step that could help to drive change would be to require Ph.D. students and postdoctoral scientists to follow an individual development plan (IDP).

In 2002, the U.S. Federation of American Societies for Experimental Biology (FASEB) recommended that every postdoctoral researcher put together an IDP in consultation with an adviser. Since then, several academic institutions have begun to require IDPs for postdocs. And in June, the U.S. National Institutes of Health (NIH) Biomedical Research Workforce Working Group recommended that the NIH require IDPs for the approximately 32,000 postdoctoral researchers they support. Other funding agencies, public and private, are moving in a similar direction.

IDPs have long been used by government agencies and the private sector to achieve specific goals for the employee and the organization. The aim is to ensure that employees have an explicit tool to help them understand their own abilities and aspirations, determine career possibilities, and set (usually short-term) goals. In science, graduate students and new Ph.D. scientists can use an IDP to identify and navigate an effective career path.

A free Web application for this purpose, called myIDP, has become available this week.‡ It is designed to guide early-career scientists through a confidential, rigorous process of introspection to create a customized career plan. Guided by expert knowledge from a panel of science-focused career advisers, each trainee’s self-assessment is used to rank a set of career trajectories. After the user has identified a long-term career goal, myIDP walks her or him through the process of setting short-term goals directed toward accumulating new skills and experiences important for that career choice. After each step, the user updates the plan, documenting efforts and progress. The user can opt to receive monthly e-mail reminders from myIDP to stay focused on goals and update progress and plans. Very importantly, the plan can be altered as skills develop, interests change, and career objectives are reconsidered.

Although surveys reveal the IDP process to be useful, trainees report a need for additional resources to help them identify a long-term career path and complete an IDP. Thus, myIDP will be most effective when it is embedded in larger career-development efforts. For example, universities could incorporate IDPs into their graduate curricula to help students discuss, plan, prepare for, and achieve their long-term career goals. The participation of faculty mentors is essential because trainees need a safe, supportive atmosphere in which to openly discuss their career plans and interests.

By turning introspection into a structured exercise, the use of IDPs allows trainees to translate a vague source of anxiety into a working plan, applying their well-developed analytical skills to the critical problem of building their own lives and careers.

—Jim Austin and Bruce Alberts