2009 NATIONAL DROSOPHILA BOARD MEETING AGENDA

March 4, 2009, Sheraton Chicago Hotel & Towers, Chicago Illinois
Michigan A/B, 2nd Floor, 3:00 – 6:00 PM

		Report
1. INTRODUCTION & APPROVAL OF THE 2008 MINUTES	**3:00 – 3:05**	1
2. REPORT ON 2009 FLY MEETING (John Carlson, Lynn Cooley, Rick Fehon)	**3:05 – 3:20**	2
3. 2010 PROGRAM COMMITTEE	2’	3
4. REPORT OF THE GSA MEETING COORDINATOR (Suzy Brown)	**3:25 – 3:40**	4
5. TREASURER’S REPORT (Pam Geyer)	**3:40 – 3:50**	5
6. DROSOPHILA BOARD ELECTION REPORT (Trudy MacKay)	**3:50 – 4:00**	6
AWARDS	**4:00 – 4:05**	
7. SANDLER LECTURESHIP COMMITTEE (John Carlson)	4’	7
8. IMAGE AWARD (David Bilder)	2’	8
COMMUNITY RESOURCE REPORTS & PROJECTS	**4:05 – 6:00**	
9. BLOOMINGTON STOCK CENTER (Kathy Matthews, Kevin Cook)	5’	9
10. GENOME DISRUPTION PROJECT (Hugo Bellen)	15’	10
11. FLYBASE (Bill Gelbart)	2’	11
12. DROSOPHILA INFORMATION SERVICE (Jim Thompson)	3’	12
13. DROSOPHILA SPECIES STOCK CENTER (Teri Markow)	5’	13
14. KYOTO DROSOPHILA GENETIC RESOURCE CENTER (Kevin Cook)	5’	14
15. TRANSGENIC RNAi (Stephanie Mohr)	5’	15
16. DROSOPHILA BOARD WHITE PAPER (Carl Thummel)	15’	16
17. ONGOING ISSUES		17
DROSOPHILA NOMENCLATURE (Teri Markow)	10’	
FLY BOOK (Lynn Cooley, Michael Ashburner)	5’	
FUTURE STOCK CENTER CAPACITY (Hugo Bellen)	20’	
BOARD REPRESENTATION FOR UNDERGRADUATE INSTITUTIONS	15’	
OTHER BUSINESS	10’	
ADJOURN	**6:00**	

Present: Susan Abmayr, Utpal Banerjee, Phil Batterham, Hugo Bellen, Celeste Berg (for Hannele Rhohola-Baker), Suzy Brown, John Carlson, Sue Celniker, Kevin Cook, Lynn Cooley, Barry Dickson, Rick Fehon, Liz Gavis, Bill Gelbart, Pam Geyer, R. Scott Hawley, Thom Kaufman, Chuck Langley, Howard Lipshitz, A. Javier Lopez, Trudy MacKay, Patrick O’Grady (for Teri Markow), Kathy Matthews, Helen McNeill, Stephanie Mohr, Denise Montell, Tom Neufeld, Terry Orr-Weaver, Jeff Sekelsky, Allan Spradling, Jim Thompson, Carl Thummel. Newly elected Board members were introduced: Denise Montell (President-Elect), Pam Geyer (Treasurer), Tom Neufeld (Midwest), Janice Fischer (Heartland), and Helen McNeill (Canada). Thanks and appreciation were expressed to Board members who completed their terms: Michael Bender (Treasurer), Pam Geyer (Midwest), Susan Abmayr (Heartland), and Howard Lipshitz (Canada). Sherry Marts, the new Executive Director of the GSA, was introduced.

1. MINUTES OF 2008 DROSOPHILA BOARD MEETING

Meeting was held April 2, 2008, at the Town and Country Resort and Conference Center, San Diego, California. Submitted by Utpal Banerjee. Posted on FlyBase and approved by the Board.

Present:
Susan Abmayr, Michael Ashburner, Utpal Banerjee, Phil Batterham, Hugo Bellen, Michael Bender, David Bilder, Nancy Bonini, Nick Brown, Kevin Cook, Lynn Cooley, Susan Celniker, Bill Gelbart, Pam Geyer, Jamila Horabin, Thom Kaufman, Masahiko Kitayama, Mitzi Kuroda, Chuck Langley, Howard Lipshitz, A. Javier Lopez, Trudy MacKay, Teri Markow, Kathy Matthews, Brian Oliver, Terry Orr-Weaver, Helen Salz, John Tamkun, Jim Thompson

2. REPORT OF THE 2009 ORGANIZING COMMITTEE (John Carlson, Lynn Cooley, Rick Fehon)

The formation of this year's organizing committee started at the 2008 meeting in San Diego when the board asked Lynn Cooley to form a committee to organize the 2009 meeting. The Drosophila Board asked her to prepare "something special" since the 2009 meeting is the 50th annual meeting. She met with Suzy Brown and the 2008 chairs, Sue Celniker, Nancy Bonini and John Tamkun for an informational lunch. Following the meeting, Lynn recruited John Carlson and Rick Fehon to form the organizing committee.

The organization of the meeting went smoothly. The reports and comments from the previous organizers were very helpful, and Suzy Brown kept us well informed of procedures and deadlines, quickly answering innumerable questions. The committee met frequently by video iChat. Although we worked together on everything, we divided lead responsibility for three major tasks thus: Session topics and chairs – Lynn, Workshops – Rick, Poster Judging – John. Workshops continue to be challenging, but the guidelines developed by John Tamkun and last year's committee made the process much smoother.

50th Anniversary Celebration:
The committee discussed several ideas to celebrate the 50th anniversary of the meeting. We quickly decided to modify the traditional Historical Lecture given on the first evening of the meeting to present a retrospective of Fly Meeting history, emphasizing the strong community spirit and collaborative nature of Drosophila researchers. We also wanted an entertaining format. We turned to Scott Hawley, who has experience interviewing for the Conversations in Genetics series, to carry out these interviews, and he enthusiastically accepted.

The committee wanted to distribute an anniversary souvenir to the meeting participants, and debated several options (e.g., mug, bag, water bottle). After informal surveys of our lab members, we settled on a tee shirt. We asked the Drosophila Board for permission to purchase tee shirts for participants, and they agreed. Registration fees were raised $10 to cover the cost since the GSA was already predicting a deficit for the meeting. The design of the shirt is based on the graphic we developed for the Program Book. Suzy found us a vendor who will supply unisex, women's and children's sizes. We decided to offer them free to all who register by the early abstract deadline as an incentive for people to register early. Additional tee shirts will be available for sale at the meeting.

Program Book & Registration:
As directed by the discussion at last year's Board meeting, we printed only the schedule and lists of talks and posters in the Program Book. All abstracts are available online and a meeting Wi-Fi will be set up for on-site access to abstracts.

Pre-registration for the meeting is strong. 1,380 people have registered for the meeting as of Jan. 30, 2009, which is a few more than the last three years (1,354-2008; 1,344-2007; 1,275-2006; 1,435-2005; 1,540-2004), possibly because this was the cut-off for getting a free t-shirt. Suzy Brown (GSA) will provide a more complete picture of the final numbers for meeting registration and attendance.

The meeting organizers, plenary speakers, 50th Anniversary Historical Panel, and the Larry Sandler memorial lecturer were offered free registration. This is a continuation of what was offered the year before. With two exceptions, all had to cover their room fees and travel costs. Two of the Historical Panel members are retired (Mel Greene and Dan Lindsley), so they were provided complimentary hotel rooms.

Invited Speakers:
During May, we compiled a list of possible Plenary Speakers. Our criteria were representation of the breadth of research done with Drosophila, reasonable gender and geographical balances and a mix of junior and senior investigators. We eliminated people who have given Plenary talks in recent years and then voted by email. The list of speakers was completed by the end of May 2008 in time to be added to the postcard advertising the meeting. **2009 Plenary Speakers**: Daniel Barbash, Nick Brown, Wu-Min Deng, Michael Dickinson, Daniela Drummond-Barbosa, Barry Ganetzky, Steve Henikoff, John Reinitz, David Schneider, Tadashi Uemura, Mariana Wolfner and Jennifer Zallen.

The Organizing Committee and Scott Hawley decided on a special format to replace the Historical Lecture on opening night. Scott will “interview” several prominent scientists who can provide perspective on the earliest Drosophila Meetings and how they have changed over the years. We hope that they will convey the spirit of openness established at the first meetings, a sense of how the science has progressed over the years, some personal anecdotes and glimpses into the future of Drosophila research. We discussed candidates for the interviewees, and settled on a list of people who span decades of Drosophila Meetings and a wide range of science. **50th Anniversary celebration participants**: Scott Hawley, Mel Greene, Thom Kaufman, Ruth Lehmann, Dan Lindsley, Tony Mahowald and Eric Wieschaus. All enthusiastically accepted Scott’s invitations to participate.

Sessions:
Based on suggestions from the 2008 Organizers and our mandate to reduce overlap between the Workshops and Platform Sessions, we made several modifications to the Session Topics:

- Separated Immune System from Cell Death
- Created Immunity with Pathogenesis (and eliminated Workshop)
- Created Cell Death Session (and eliminated Workshop)
- Created Cell Cycle & Checkpoints Session (and eliminated Workshop)
- Merged Gametogenesis with Organogenesis
- Created Stem Cells Session
- Merged Cell Biology with Signal Transduction
- Eliminated Genome & Chromosome Structure
- Included Epigenetics with Chromatin

We then decided on a list of session chairs, using the same criteria and methods as for selecting the plenary speakers, but in general we put a little more emphasis on recruiting more junior investigators who might be coming up for tenure. In addition to selecting speakers and chairing their session, we asked the session chairs to be prepared to nominate one student and one postdoc poster for a poster award during the meeting. We suggested they assemble a small committee prior to the meeting to help with reviewing posters. Three people we invited to chair sessions declined for various reasons, while everyone else (including alternates for the three who declined) gladly agreed to do it. We gave people the option of recruiting a co-chair, and three people did that. The session

chairs list was completed by the end of May/early June. In general, we found people enthusiastic about participating in the meeting. **This year's chairs**: Elizabeth Chen, Henry Chang, Mary Lilly, Jamie Rusconi, Iswar Hariharan, Ting Wu, Mel Feany, Sergey Nuzhdin, Celeste Berg, Louisa Wu, Dietmar Schmucker, Kurt McKean, Ravi Allada, Chip Ferguson, Rolf Bodmer, Steve Crews, Andrew Simmonds, Haifan Lin, Mike Eisen.

Shortly after the early November Abstract Submission Deadline, the session chairs were each sent the list of abstract submissions for their respective topic. They were asked to rank order their selections for talks, with one or two alternates. The organizers took these lists to assign platform presentations for each session. We compiled a master list to determine whether any lab had excessive representation.

Abstract Submission:
Abstracts were then solicited in 17 topics with associated keywords (see below). We received 873 abstracts by the early deadline, and 147 late abstracts for an impressive total of 1020 abstracts, more than in any recent year except 2005. Totals in recent years were: 993 in 2008, 897 in 2007, 910 in 2006, 1043 in 2005, 982 in 2004, 1016 in 2003, 1003 in 2002 and 966 in 2001.

There were 431 requests for platform presentations for 156 available slots, allowing accommodation of 36% of the requests, the same as for 2008. The results showed that we dramatically underestimated the number of people who would choose “Cell Biology & Signal Transduction”. There were 77 requests for talks in this area, more than twice the next most requested topic:

2009 Abstracts received, ordered by number of talk requests

abstr	talk?	session
150	77	01. Cell biology & signal transduction
67	35	07. Evolution and quantitative genetics
75	34	05. Chromatin and epigenetics
68	29	08. Gametogenesis and organogenesis
67	28	14. Regulation of gene expression
41	25	04. Cell division and growth control
50	24	06. Drosophila models of human diseases
34	23	16. Stem cells
43	22	15. RNA biology
54	21	10. Neural physiology and behavior
43	21	12. Pattern Formation
41	20	13. Physiology and aging
40	20	17. Techniques and functional genomics
29	19	09. Immunity and pathogenesis
33	14	11. Neurogenetics and neural development
24	13	03. Cell death
14	6	02. Cell cycle and checkpoints
873	431	Totals

We asked Elizabeth Chen (Chair of this session) to help us split the talks into two sessions, and recruit another person to Chair the new session. She asked Henry Chang to help, and the two of them (in consultation with the Organizing Committee) split the talks into “Cell Biology & Cytoskeleton” and “Cell Biology & Signal Transduction”. To accommodate this change, we merged Cell Death with Cell Cycle & Checkpoints since these received the fewest number of abstracts and requests for talks. We then assigned the number of talks per topic based on the number of talk requests to make the chance of getting a talk as constant as possible across topics. The final 2009 topics are shown below (with two

previous years for comparison). We did our best to avoid scheduling related sessions at the same time.

2009 Session Topics	**ABS-TALKREQ-TALKS (% success getting a talk)**
Cell Biology & Cytoskeleton	~75-43-14 (33%)
Cell Biology & Signal Transduction	~75-34-14 (41%)
Cell Cycle, Checkpoints & Cell Death	38-19-7 (37%)
Cell Division & Growth Control	41-25-8 (32%)
Chromatin & Epigenetics	75-34-14 (41%)
Drosophila Models of Human Disease	50-24-8 (33%)
Evolution & Quantitative Genetics	67-35-14 (40%)
Gametogenesis & Organogenesis	68-29-8 (28%)
Immunity and pathogenesis	29-19-7 (37%)
Neurogenetics and neural development	33-14-7 (50%)
Neural physiology and behavior	54-21-8 (38%)
Pattern Formation	43-21-8 (38%)
Physiology & Aging	41-20-7 (35%)
Regulation of Gene Expression	67-28-8 (29%)
RNA Biology	43-22-8 (36%)
Stem Cells	34-23-8 (35%)
Techniques & Functional Genomics	40-20-8 (40%)

2008 Session Topics	**ABS-TALKREQ-TALKS (% success getting a talk)**
Cell division and Growth Control	70-28-8 (29%)
Cytoskeleton and Cell Biology	76-39-14 (36%)
Genome and Chromosome Structure	20-7*-7 (57%)
Regulation of Gene Expression	89-32-14 (44%)
Chromatin and Gene Expression	36-13-7 (53%)
Signal transduction	63-24-8 (33%)
Pattern formation	61-27-8 (30%)
Gametogenesis	107Y-26-8 (30%)
Organogenesis	Y-26-8 (30%)
Neurogenetics and neural development	74-23-8 (35%)
Neural physiology and behavior	52-22-8 (36%)
Evolution and quantitative genetics	90-46-14 (30%)
Immune system and cell death	63-34-8 (24%)
Techniques and genomics	40-20-7 (35%)
Drosophila models of human diseases	76-35-14 (40%)
Physiology and aging	44-15-8 (53%)
RNA Biology	32-15-7 (46%)

*In addition to the seven first choice abstracts there were 21-second choice abstracts and three of these were chosen for talks.

Y Abstract number is for the combined Gametogenesis and organogenesis topic since we didn’t have separate topics initially.

2007 Session Topics	**ABS-TALKREQ-TALKS (% success getting a talk)**
Cell division and Growth Control	87-39-14 (36%)
Cytoskeleton and Cell Biology	83-34-14 (41%)
Genome and Chromosome Structure	59-22-8 (36%)
Regulation of Gene Expression	107-47-14(30%)
Signal transduction	65-30-14 (47%)
Pattern formation	70-38-14 (37%)
Gametogenesis and sex determination	51-25-8 (32%)
Organogenesis	38-17-8 (47%)

Neurogenetics and neural development	52-18-8 (44%)
Neural physiology and behavior	60-24-8 (33%)
Evolution and quantitative genetics	94-35-14 (40%)
Immune system and cell death	59-24-8 (33%)
Techniques and genomics	39-16-7 (44%)
Drosophila models of human diseases	70-30-8 (27%)
Physiology and aging	53-26-8 (31%)

Workshops:
We modified the Workshop selection process based on the thoughtful recommendations of last year's organizing committee. One important goal was to reduce overlap with the topics represented in the Concurrent Platform Session. To this end, we invited past organizers of three workshops (Cell Cycle & Checkpoints, Cell Death and Immunity & Pathogenesis) to chair new Platform Sessions. In addition, we eliminated the late-night concurrent workshop session on Saturday to reduce competition with the poster session. This left two concurrent workshop sessions (Friday afternoon and Saturday evening), each with a maximum of five topics (based on room availability), in addition to the Ecdysone Workshop held on Wednesday afternoon. Based on the number of applications, this seems to be about the right number of workshops.

The workshop selection criteria and an application form were made available on the meeting website. Applications in the following areas were encouraged:

- Techniques
- Emerging or specialized areas of research
- Community resources
- Professional development
- Education (undergraduate or graduate)
- Other topics of general interest to the *Drosophila* community

We received 13 applications, two of which were declined because of space limitations and the view that they either overlapped significantly with existing platform sessions or were not sufficiently well defined to warrant a Workshop slot. We followed John Tamkun's advice based on last year's experience closely in setting priorities for Workshops. We made it clear in the instructions that the workshops should not overlap with platform sessions, either in terms of overall topic or speakers. This strategy seems to have worked, since we received only one application that significantly overlapped with a Platform session. In short we followed all of the recommendations from last year's committee, except that we scheduled 5 concurrent workshops for each of two sessions. This may result in some complaints from attendees wanting to attend competing workshops, but this seems preferable to either alternative – scheduling a late-night workshop or rejecting scientifically excellent proposals.

We had a couple of instances of the same speaker selected for both a platform talk and a workshop talk. The guidelines stipulate no overlap should be tolerated so we decided to stick to the rules and asked workshop organizers to find other speakers. In the future, we think this problem can be avoided by providing a list of the platform speakers to the Workshop chairs when they are notified that their Workshop proposal has been accepted. This should simplify things, but it is important that the Workshop chairs be asked to keep the platform speaker list confidential, since for logistic reasons the speakers are not informed for several weeks after the list is finalized.

In general, because we had fewer workshop applications the process seems to have gone more smoothly this year than last. Future organizers may want to revisit the number of concurrent Workshops to see if our decision to hold 5 concurrently was wise based on feedback from this year's participants. We also agree with last year's organizers that a web-based form on the meeting web site should be developed for Workshop applications.

This would considerably decrease the amount of effort required by the organizers for gathering, formatting, and distributing Workshop applications.

Poster awards:
The award committee consists of all the platform session chairs for initial judging, and Barbara Wakimoto, Paul Lasko, Chuck Langley, and John Carlson for final selection. The session chairs will read all of the posters in their area (with the help of a small committee they assemble) and nominate one presented by a post doc and one presented by a graduate student/undergrad via e-mail to John Carlson by Friday 7 AM. These nominations will be forwarded to Barbara Wakimoto, Paul Lasko, and Chuck Langley. Results will be tallied/discussed at the entrance to the posters at 7PM Friday. Ribbons (1st, 2nd, 3rd place, Honorable Mention) will be immediately pinned to the posters, so that the presenters will have two sessions in which to stand in front of their recognized posters. Winners will be recognized during the final plenary session, and the winning posters will also be displayed in front of the plenary session room. The GSA provides cash prizes and copies of Conversations in Genetics videos to give to the award recipients.

Interaction with the GSA office:
Suzy Brown again did a fantastic job helping the organizing committee with all aspects of meeting organization. She has a detailed timetable that is very helpful, and ready answers to every question. The GSA staff was also very helpful in finalizing the graphic design for the program book, and the design of the anniversary tee shirt.

This year the GSA staff arranged for a web-based service for uploading slide presentations. The interface is a little problematic since the vendor apparently does not have a security certificate recognized by the popular browsers. We suggest this be addressed for next year so the interface is smoother.

The GSA is sponsoring a Mentor Roundtable Lunch again this year. They are charging $10 – although this does not cover the cost of lunch, the idea is that a small charge will ensure people who sign up actually attend the lunch.

Discussion points during the Board Meeting:

- The ASCB meeting offers an on-site poster printing service that is very useful. Posters can be uploaded to the vendor before the meeting and picked up in the poster hall thus avoiding the necessity to carry poster tubes on airplanes. The cost was $70, which is quite reasonable. We should consider offering the same service.

The board thought this was a good idea and Suzy Brown offered to look into this service for the fly meeting next year.

- Are five concurrent workshops OK?

This was approved by the Board. There was also agreement that we should continue to avoid scheduling a Saturday night workshop.

- Should we allow a person to give two talks, one platform and one workshop, if the topics are different?

The board decided against this. This is already written in the Workshop Selection Criteria. The organizing committee indicated that these criteria, which were drafted by the organizers of the 2008 fly meeting, worked out very well and should be used for arranging workshops at future meetings (see below).

- Do we like the smaller program book? Should we have a CD, too?

The board decided that we should wait for feedback on the new short book format before making any further changes.

- How did the slide uploading interface work for everyone?

There was insufficient feedback to decide how the slide uploading interfaced worked for this meeting.

- Do we want to consider a fresh format for the Historical Lecture?

It was suggested during the Board meeting that the organizers of each meeting should feel free to experiment with different formats. These could include historical talks, as in past meetings, topics related to science policy, funding, the grant/paper review process, or other topics of general scientific interest.

- Do we want Plenary Speakers to submit abstracts?

The Board was strongly in favor of this.

- Do we want a representatives of the media at the meeting?

This was generally approved by the Board. Sherry Marts offered to look into this for the next meeting.

Information useful for planning future meetings:

Plenary Speakers, through 2009 Chicago

Susan Abmayr	1995
Ravi Allada	2007
David Anderson	2008
Kathryn Anderson	1999
Deborah Andrew	1997
Doris Bachtrog	2005
Bruce Baker	1996, 2002
Utpal Banerjee	1997, 2005
Daniel Barbash	**2009**
Konrad Basler	2003
Amy Bejsovec	2000
Phil Beachy	1998
Hugo Bellen	1997
Marianne Bienz	1996
Ethan Bier	2002
Mark Biggin	2008
David Bilder	2008
Seth Blair	1997
Grace Boekhoff-Falk	2003
Nancy Bonini	2000
Juan Botas	1999
Andrea Brand	2001
Sarah Bray	2005
Nick Brown	**2009**
Vivian Budnik	2000
Ross Cagan	1998
John Carlson	1999, 2002
Sean Carroll	1995, 2006
Richard Carthew	2005
Sara Cherry	2008
Bill Chia	2006
Andrew G. Clark	2002
Tom Cline	2000
Steve Cohen	2008
Francis Collins	2004
Claire Cronmiller	1995
Ilan Davis	2001
Rob Denell	1999
Wu-Min Deng	**2009**
Claude Desplan	2007
Michael Dickinson	1995, **2009**
Barry Dickson	2006
Daniela Drummond-Barbosa	**2009**
Chris Doe	1996
Ian Duncan	2001
Bruce Edgar	1997
Mike Eisen	2007
Sarah Elgin	2005
Anne Ephrussi	2001
Mel B. Feany	2002
Martin Feder	1998
Janice Fischer	1998
Nicole Francis	2008 (accepted but withdrew March 7th)
Matthew Freeman	2004
Minx Fuller	2003
Barry Ganetzky	**2009**
Ulrike Gaul	2007
Elizabeth R. Gavis	2002
Pam Geyer	1996
Richard Gibbs	2003
David Glover	2000
Kent Golic	2001
Ralph Greenspan	2005
Leslie Griffith	2006
Ernst Hafen	2005
Iswar Hariharan	2003
Dan Hartl	2001
Scott Hawley	2001
Tom Hayes	1995
Ulrike Heberlein	1996, 1998
Martin Heisenberg	1998
Steve Henikoff	**2009**
David Hogness	1999
Joan Hooper	1995
Yuh Nung Jan	2005
Wayne Johnson	2000
Laura Johnston	2005
Gary Karpen	2006
Timothy Karr	2003
Thom Kaufman	2001
Manolis Kellis	2008
Rebecca Kellum	1999
Christian Klambt	1998
Artyom Kopp	2008
Thomas B. Kornberg	2002
Mark Krasnow	2004
Henry Krause	2004
Ed Kravitz	2004
Mitzi Kuroda	2003
Chuck Langley	2006
Paul Lasko	1999
Cathy Laurie	1997
Thoma Lecuit	2007
Ruth Lehmann	2002
Mike Levine	2003
Bob Levis	1997
Haifan Lin	1995
Susan Lindquist	2000
John Lis	2001

Troy Littleton	2006
Liqun Luo	2003
Trudy Mackay	2000
Richard Mann	2006
J. Lawrence Marsh	2004
Erika Matunis	2004
Dennis McKearin	1996
Mike McKeown	1996
Gero Miesenbock	2006
Jon Minden	1999
Marek Mlodzik	2006
Denise Montell	2002
Mohamed Noor	2007
Roel Nusse	1997
David O'Brochta	1997
Michael O'Connor	2005
Terry L. Orr-Weaver	2002
Linda Partridge	2004
Mark Peifer	1997
Trudy MacKay	2000
Nipam Patel	2000
Norbert Perrimon	1999
M. Ramaswami	2001
Robert Rawson	2003
John Reinitz	**2009**
Don Rio	2007
Pernille Rorth	1995, 2007
Gerry Rubin	1998, 2001
Eric Rulifson	2007
Hannele Ruohola-Baker	1999
Babis Savakis	1995
Paul Schedl	1998
Dietmar Schmucker	2008
David Schneider	**2009**
Gerold Schübiger	1996
Trudi Schüpbach	2004
Thomas Schwarz	2007
Kristin Scott	2007
Matthew P. Scott	2002
John Sedat	2000
Amita Sehgal	2003
Pat Simpson	2008
Marla Sokolowski	1998
Allan Spradling	2008
Ruth Steward	1996
Daniel St. Johnston	2005
Tin Tin Su	2002
Bill Sullivan	1996
John Sved	1997
John Tamkun	2000
Barbara Taylor	1996
William Theurkauf	2002
Jessica Treisman	2005
Tim Tully	1995
Tadashi Uemura	**2009**
Talila Volk	2004
Leslie Vosshall	2006
Barbara Wakimoto	2001
Lori Wallrath	2007
Steve Wasserman	1996
Kevin P. White	2004
Kristin White	2004
Eric Wieschaus	1996
Rachel Wilson	2008
Mariana Wolfner	**2009**
Ting Wu	1997
Tian Xu	1997
Jennifer Zallen	**2009**
Philip Zamore	2003
Susan Zusman	1998

Session Topics & Keywords 2009

01 Cell biology & signal transduction

a. cytoskeleton
b. cell polarity
c. intracellular transport
d. secretion
e. endocytosis
f. migration
g. hedgehog
h. wingless
i. dpp
j. Notch
k. receptor tyrosine kinase/phosphatase
l. JAK/STAT
m. Rho GTPases
n. live imaging
o. other

02 Cell cycle and checkpoints

a. checkpoint
b.

kinase/phosphatase/cyclin
c. developmental modulation
d. DNA repair
e. DNA replication
f. APC
g. other

03 Cell death

a. caspases
b. death mutants/genes
c. inhibitors of apoptosis (iaps)
d. transcriptional regulation
e. autophagy
f. physiological apoptosis
g. other

04 Cell division and growth control

a. mitosis
b. meiosis
c. centrosome
d. kinetochores and cohesion
e. spindles and motors
f. cytokinesis
g. cell growth
h. tissue growth
i. tumor suppressors and oncogenes
j. cell competition
k. insulin
l. other

05 Chromatin and epigenetics

a. chromatin structure
b. chromatin assembly
c. heterochromatin
d. remodeling complexes
e. histone variants and modifications
f. insulators/boundary elements
g. polycomb/trithorax complexes
h. other

06 Drosophila models of human diseases

a. neural degeneration
b. cancer
c. cardiovascular
d. diabetes and obesity
e. addiction
f. developmental disorders
g. drug discovery
h. small RNAs
i. other

07 Evolution and quantitative genetics

a. genome evolution
b. population variation
c. evolution and development
d. quantitative traits
e. speciation
f. phylogenetics
g. other

08 Gametogenesis and Organogenesis

a. spermatogenesis
b. oogenesis
c. pre-gametogenic germ cell development
d. sex determination
e. sex-specific traits and molecules
f. dosage compensation
g. endodermal derivatives
h. mesodermal derivatives
i. ectodermal derivatives
j. extracellular matrix/cell adhesion
k. imaginal disc morphogenesis
l. other

09 Immunity and pathogenesis

a. cellular immunity
b. humoral immunity
c. transcriptional regulation
d. stem cells
e. host/pathogen interaction
f. Wolbachia
g. other

10 Neural physiology and behavior

a. sensory
b. synapse
c. neurotransmitters
d. neuropeptides
e. ion channels
f. homeostasis
g. learning/memory
h. courtship and mating
i. circadian rhythms
j. eating
k. aggression
l. hormones
m. other

11 Neurogenetics and neural development

i. axon guidance
j. dendrites
k. synaptogenesis
l. neuronal specification
m. neuronal morphogenesis
n. programmed cell death
o. glia
p. hormonal control
q. CNS
r. sensory
s. postembryonic

t. stem cells
u. other

12 Pattern formation

a. segmentation
b. homeotics
c. axis specification
d. compartments and boundaries
e. cell migration and motility
f. commitment
g. eye disc
h. wing disc
i. leg disc
j. non-Drosophila patterning
k. other

13 Physiology and aging

a. stress response
b. metabolism
c. nutrition
d. nutrient sensing
e. endocrine function
f. dietary restriction
g. oxidative damage
h. physiology of adult organs
i. other

14 Regulation of gene expression

a. core promoters and general transcription factors
b. enhancers
c. activators/coactivators
d. repressors/corepressors
e. position effect variegation
f. other

15 RNA Biology

a. miRNA
b. small RNAs
c. non-coding transcripts
d. RNA binding proteins
e. RNA localization
f. RNAi (RNA interference)
g. RNA elongation and stability
h. splicing and its regulation
i. UTRs
j. other

16 Stem cells

a. somatic stem cell
b. germline stem cell
c. niche
d. maintenance
e. signaling
f. other

17 Techniques and functional genomics

a. microarrays
b. RNAi
c. microscopy
d. gene disruption and targeting
e. gene and transcript mapping
f. computational analyses
g. mutational screens
h. molecular interactions
i. small compounds
j. ChIPchip
k. ChIPseq
l. recombination systems
m. other

Session Chairs, through 2009 Chicago

Cell Biology & Cytoskeleton
2009 Elizabeth Chen

Cell Biology & Signal Transduction
2009 Henry Chang

Cell Cycle, Checkpoints & Cell Death
2009 Mary Lilly & Jamie Rusconi

Cell Division & Growth Control
2006 Thomas Neufeld
2007 Moberg
2008 Kiger
2009 Iswar Hariharan

Chromatin & Gene Expression
2008 Elissa Lei

Chromatin & Epigenetics
2009 Ting Wu

Cytoskeleton & Cell Biology
2003 Sisson / Miller
2004 Schoeck
2005 Helmut Kramer
2006 Dave Bilder (1/2 session…)
2007 Zallen
2008 McCartney (two sessions)
2009 changed to Cell Biol & Cytoskeleton

Drosophila Models of Human Disease:
2005 Ming Guo
2006 Fortini
2007 Bonini / Fortini?
2008 Bier (two sessions)
2009 Mel Feany

Evolution & Quantitative Genetics
2003 McAllister & Gleason
2004 Andolfatto
2005 Long
2006 Gibson
2007 Stern
2008 Wittkopp (two sessions)
2009 Sergey Nuzhdin

G**ametogenesis & Sex Determination**
2003 Matunis / Godt
2004 Brill
2005 Arbeitman
2006 Rick Kelley
2007 Van Doren
2008 Xie Chen

Gametogenesis & Organogenesis
2009 Celeste Berg

Genome & Chromosome Structure
2003 Dernburg / Gallant
2004 Brock
2005 Biessmann
2006 Geyer
2007 Ahmad
2008 Hoskins
2009 became Chromatin & Epigenetics

Immune System & Cell Death
2003 McCall & Bergmann
2004 Manoukian
2005 Brachman
2006 Bergmann
2007 Schneider
2008 White (Kristin)

Immunity & Pathogenesis
2009 Louisa Wu & Kurt McKean

Mitosis, Meiosis & Cell Division
2003 Su / Johnston
2004 Campbell
2005 Scholey
2006 became Cell Division & Growth Control

Neurogenetics & Neural Development
2003 Wolff / Seeger
2004 Yong Rao
2005 Zinn
2006 Kwang-Wook Choi
2007 Grueber
2008 Freeman
2009 Dietmar Schmucker

Neurophysiology & Behavior
2003 Smith / Taylor
2004 Boulianne
2005 Krantz
2006 Littleton
2007 Blau
2008 Clandinin
2009 Ravi Allada

Organogenesis
2003 Abmayer / Cripps
2004 Godt
2005 Frasch
2006 Debbie Andrew
2007 Baylies
2008 Justin Kumar
2009 merged with Gametogenesis

Pattern Formation I
2003 Horabin & Rogers
2004 Laura Nilson
2005 Raftery
2006 Justin Kumar
2007 Stathopoulos

2008 Richard Mann
2009 Chip Ferguson

Pattern Formation II
2003 Pollack & Jones
2004 Tepass
2005 Stuart Newfeld
2006 Rushlow
2007 Irvine
2008 (only one session of eight)

Physiology & Ageing
2006 Pletcher
2007 Tatar
2008 Drummond-Barbosa
2009 Rolf Bodmer & Eric Rulifson

Regulation of Gene Expression
2003 Arnosti / Orenic
2004 Vett Lloyd
2005 Coury
2006 Scott Barolo
2007 Small
2008 Arnosti (two sessions)
2009 Steve Crews

RNA Biology
2008 Lopez
2009 Andrew Simmonds

Signal Transduction I
2003 Jiang / Robinow
2004 Therrien
2005 Erica bach
2006 Xinhua Lin
2007 Rebay
2008 Barolo
2009 merged with Cell Biology

Signal Transduction II
2003 Halder / McNeill
2004 Bruce Reed
2005 Marques
2006
2007 Wharton
2008 (only one session of eight talks)

Stem Cells
2009 Haifan Lin

Techniques & Genomics
2003 Christenson & Dearolf
2004 Westwood
2005 Amy Kiger
2006 Chen
2007 Dasgupta

Techniques and Functional Genomics
2008 Bernard Mathey-Prevot
2009 Mike Eisen

Historical Speakers, through 2009 Chicago

1999: Dan Lindsley (introduction) and Iris Sandler (Keynote) followed by Gerry Rubin (introduction) and David Hogness (Keynote)
2000: Seymour Benzer
2001: Gerry Rubin
2002: Ed Lewis
2003: Michael Ashburner
2004: Peter Lawrence
2005: Chrstiane Nusslein-Volhard
2006: Thom Kaufman
2007: Spyro Artavanis-Tsakonas
2008: Antonio Garcia-Bellido
2009: Scott Hawley (moderator), Mel Greene, Thom Kaufman, Ruth Lehmann, Dan Lindsley, Tony Mahowald, Eric Wieschaus

Suggestions for future historical speakers: Allan Spradling, Eric Weischaus, John Merriam, Tony Mahowald, Bill Gelbart, Tom Cline, Walter Gehring, Bruce Baker, Margaret Kidwell, Barry Ganetzky.

Workshop Selection Criteria (available online):

50th Annual Drosophila Research Conference
Workshop Selection Criteria

Individuals who wish to organize a workshop at the 2009 Drosophila Research Conference should submit an application no later than November 3, 2008. The number of workshop requests will probably exceed the capacity of the conference site and there is no guarantee that all requests will be accommodated. Please consider the following guidelines carefully before submitting an application:

1. Workshops should be devoted to topics that are not covered in scheduled platform sessions. They are not intended to serve as *de facto* platform sessions to be held on a recurring basis.

2. Examples of topics appropriate for workshops include:

- Techniques
- Emerging or specialized areas of research
- Community resources
- Professional development
- Education (undergraduate or graduate)
- Other topics of general interest to the *Drosophila* community

3. Workshops must not exceed two hours in length. Although there is no standard format for workshops, organizers are encouraged to schedule sufficient time for discussion.

4. Organizers must independently identify individuals who wish to participate in their workshops; they will not be allowed to review abstracts submitted by individuals who wish to present their work in poster or platform sessions

5. Workshop participants are encouraged to present their work as posters, but will not be allowed to speak in both a workshop and a platform session. Those authors whose abstracts are selected as poster presentations MUST display their poster for the length of the conference in the poster area and MUST present that poster during scheduled times. If the poster will be needed for the workshop, a duplicate poster will be necessary.

6. With adequate justification, the organizers may consider late applications for workshops devoted to late-breaking developments that arise after the application deadline.

7. One LCD projector and screen will be provided in each meeting room. Organizer is responsible for providing a laptop and loading all presentations on that laptop prior to the start of the workshop. Meeting room set (including chairs) should not be re-arranged.

The conference organizers will let applicants know whether their proposals have been approved no later than January 25, 2009.

Organizing Committees

39th Annual Drosophila Research Conf - March 25-29, 1998 * Washington, DC
Program Chairs
Kristin White, Massachusetts General Hospital
Laurel A. Raftery, Massachusetts General Hospital
Terry L. Orr-Weaver, Whitehead Institute

40th Annual Drosophila Research Conf - March 24-28, 1999 * Bellevue, WA
Program Chairs
Barbara Wakimoto, University of Washington
Susan Parkhurst, Fred Hutchinson Cancer Research Center

41st Annual Drosophila Research Conf - March 22-26, 2000 * Pittsburgh, PA
Program Chairs
Pamela K. Geyer, University of Iowa
Lori L. Wallrath, University of Iowa

42nd Annual Drosophila Research Conf - March 21-25, 2001 * Washington, DC
Program Chairs
Mariana Wolfner, Cornell University
Michael Goldberg, Cornell University
Organizing Committee
Charles Aquadro, David Deitcher, John Ewer, Michael Goldberg, John Lis,
Ross MacIntyre, Mariana Wolfner, Cornell University

43rd Annual Drosophila Research Conf - April 10-14, 2002 * San Diego, CA
Program Chairs
Kenneth C. Burtis, University of California, Davis
R. Scott Hawley, Stowers Institute for Medical Research
Charles H. Langley, University of California, Davis
Organizing Committee
David J. Begun, Kenneth C. Burtis, Linda M. Hall, Scott Hawley, Deborah A. Kimbrell, John A. Kiger, Charles H. Langley, Jeanett E. Natzle, Sergey V.Nuzhdin

44th Annual Drosophila Research Conf - March 5-9, 2003 * Chicago, IL
Organizing Committee
Dennis McKearin, University of Texas Southwestern Medical Center
Helmut Krämer, University of Texas Southwestern Medical Center
John Abrams, University of Texas Southwestern Medical Center

445th Annual Drosophila Research Conf - March 24-28, 22004 * Washington, DC
Organizing Committee
Paul Lasko, McGill University, Montreal, Canada
Howard Lipshitz, Hospital for Sick Children, Toronto, Canada

46th Annual Drosophila Research Conf - March 30-April 3 2005 * San Diego, CA
Organizing Committee
Kavita Aurora, University of California, Irvine
Rahul Warrior, University of California, Irvine
Frank Laski, University of California, Los Angeles

47th Annual Drosophila Research Conf - March 29-April 25, 2006 * Houston, TX

Organizing Committee
Hugo J. Bellen, Baylor College of Medicine, Houston, Texas
Ron Davis, Baylor College of Medicine, Houston, Texas
Georg Halder, The University of Texas, M. D. Anderson Cancer Center, Houston, TX
Graeme Mardon, Baylor College of Medicine, Houston, Texas

48th Annual Drosophila Research Conf – March 7-11, 2007 * Philadelphia, PA
Organizing Committee
Liz Gavis, Princeton University
Steve DiNardo, U Penn School of Medicine
Tom Jongens, U Penn School of Medicine
Jessica Treisman, NYU Medical Center

49th Annual Drosophila Research Conf – April 2-April 6, 2008 * San Diego, CA
Organizing Committee
Susan Celniker, LBNL
Nancy Bonini, U Penn
Brian Oliver NDDK
John Tamkun UCSC

50th Annual Drosophila Research Conference – March 4-8, 2009 in Chicago, IL
Organizing Committee
John Carlson, Yale University
Lynn Cooley, Yale University
Rick Fehon, U Chicago

51st Annual Drosophila Research Conference – April 7-10, 2010 in Washington, DC
Organizing Committee
Steven Hou, National Cancer Institute
Leslie Pick, U Maryland
Debbie Andrews, Johns Hopkins Medical School
Mark Fortini, National Cancer Institute

52nd Annual Drosophila Research Conference – March 30-April 3, 2011 in San Diego, CA

3. 2010 PROGRAM COMMITTEE

The 51st annual Drosophila Research Conference will be held April 7-10 2010, at the Marriott Wardman Park Hotel, in Washington DC. The organizers for the 2010 meeting were assembled last year – Steven Hou, Leslie Pick, Debbie Andrews and Mark Fortini.

4. REPORT OF THE GSA MEETING COORDINATOR (Suzy Brown)

50th ANNUAL DROSOPHILA RESEARCH CONFERENCE

As you can see from the information in the treasurer's report, I budgeted a loss of over $37,000 for this year. This is due in large part to the addition of a luncheon (last year) that is estimated to cost approximately $45,000 or more (depending on attendance) without, at the Board's direction, raising registration prices. Since the Drosophila Main Fund is over $282,000, this shortfall will be easily absorbed by the Fund. The Board did approve a one-time increase of $10 per registrant to cover the cost of t-shirts celebrating the 50th Anniversary of the Drosophila Conference. Since that does not seem

to have impacted attendance, I would suggest keeping the increase for future years. Although that will not cover the cost of the luncheon, it will help to offset the cost.

Registration:
Total registrations for 2009 (as of the February 10) are 1,408. This number is up 5% from 2008 at the same time. Last year we saw an additional 17% who registered after the early registration deadline. Historically we see an increase between 12 and 20% so it is quite possible the final registration number will be over 1,600.

Registration income at this point is about $44,000 below the total projected registration income of $305,350 (increased by 3% this year). The number of individuals registering as GSA members is up by 4% this year. I anticipate the revenue from late and on-site registrations will help us meet our budgeted revenue numbers for registration income.

Hotel Rates and Pick-up:
The single/double sleeping room rate is $199/$219, which is approximately 17% higher than last year. As of the cut-off date of February 7, our block was 92% sold. Generally we experience about a 5% slippage (rooms cancelled after cut-off) but we have met our commitment of 85% of the block which is important because it directly ties into complimentary space, reduced coffee prices and other contractual obligations.

Exhibitors:
Eighteen exhibit booths were sold this year compared to twenty booths last year (16 companies total). While fewer booths were sold, four additional companies are exhibiting this year (the difference being fewer multiple booths to the same company were sold). Additionally we sold two sponsorships this year compared to one last year (our first year with the new sponsorship program). Fifteen of the 16 companies are commercial companies. Overall revenue for exhibits/ads/sponsorship is up 7% .

FUTURE CONFERENCES

Dates and rates have been confirmed through 2014 and the process to look at future years has begun for 2015 and 2016. Generally , for a group this size, you want to book at least five years out. I'd like direction from the Board regarding 2015 and 2016. Do we want to keep Chicago and Washington, DC in the rotation or can other cities be considered? Orlando is very interested in getting our business for 2016 and they have several properties that are large enough for our group. Minneapolis would also like to be considered and while we would have to use the convention center, it might be a good alternative to the higher costs in Chicago. Detailed below is the schedule for the next five years:

2010 – 51st Annual Drosophila Conference: April 7-11, Marriott Wardman Park Hotel, Washington, DC. $215 ($2 LESS than 2004). All guest rooms and meeting space will have been renovated by 2010.

2011 – 52nd Annual Drosophila Conference: March 30-April 3, The Town and Country Resort Hotel, San Diego. $176/$186/$196.

2012 – 53rd Annual Drosophila Conference: March 7-11, Sheraton Chicago Hotel and Towers. $230/$253 (*maximum).

2013 – 54th Annual Drosophila Conference: April 3-7, Marriott Wardman Park Hotel. $235 (*maximum)

2014 – 55th Annual Drosophila Conference: March 30-April 3, The Town and Country Resort Hotel, San Diego. $192/$202/$232.

*Note: Sleeping room rates are also tied to the economy so if the hotel's general (rack) rates fall, so does our meeting rate.

Registrations - 2009

	Number	Amount
Members	392	$80,575.00
NonMembers	151	$48,465.00
Postdoc Members	181	$33,416.00
Postdoc Nonmembers	112	$32,892.00
Student Members	307	$27,990.00
Student Nonmembers	242	$38,050.00
Complimentary	23	0
Early/Regular	**1,408**	**$261,388.00**
Mailings-USA	79	$1,185.00
Overseas	16	$0.00
Advance Mailings		**$1,185.00**
Grand Total	**1,408**	**$262,573.00**

Registrants by Country

Country	Count
United States	1079
Canada	56
Japan	44
United Kingdom	39
France	27
Switzerland	24
Germany	17
Spain	15
Korea	14

Israel	11
Taiwan	10
China	8
Austria	7
Belgium	7
Australia	6
Italy	6
Mexico	6
Portugal	5
Argentina	3
Greece	3
India	3
Singapore	3
Brazil	2
Chile	2
Czech Republic	2
Norway	2
Sweden	2
Colombia	1
Denmark	1
Hungary	1
Iceland	1
Russian Federation	1

Total number of registrants: 1408

32 countries

The Board expressed general approval for a 2015 Midwest meeting to be held in Chicago once again, although Houston is also a possibility. Access to/from a major airport was considered a plus. The added expense of the Chicago-based meeting this year could be overcome by cancelling the Networking Box lunch. There was general approval for this change in future meetings. There was, however, also a general consensus that the goal of the Networking lunch was worthwhile and that we should try to come up with another way to achieve this goal in future meetings.

5. TREASURER'S REPORT (Pam Geyer)

A. ANNUAL DROSOPHILA CONFERENCE INCOME/EXPENSE

(Data are from the GSA [Chuck Windle, Suzy Brown], 2/4/09)

	Houston	Philadelphia	San Diego	Chicago

		2006 Actual	2007 Actual	2008 Actual	2009 Budget
	REVENUE				
1	Registration Fees	$274,135	$288,067	$281,093	$305,350
2	Contributions and Sponsorships	1,052	0	3,800	4,000
3	Exhibit Fees	22,600	19,600	25,620	25,000
4	Advertising/Mail Lists/Other	640	3,760	1,086	1,000
5	Revenue	298,427	311,427	311,599	335,350
	EXPENSE				
6	Salary, Payroll Tax and Benefits	82,527	82,027	76,109	80,500
7	Printing and Mailing	29,062	24,815	26,715	19,700
8	Receptions and Catered Events (Note 1)	93,345	83,758	118,942	154,000
9	Posters and Exhibits	22,964	34,832	18,919	25,500
10	Supplies and Duplicating	1,978	1,798	1,211	2,000
11	Hotel and Travel	5,457	3,640	4,607	4,500
12	Audiovisual Services (Note 2)	37,339	45,535	53,125	62,500
13	Other Contracted Services	9,380	3,221	3,096	5,000
14	Telephone and fax	1,382	2,541	4,905	10,500
15	Credit Card Fees	8,013	7,641	9,124	9,000
16	Miscellaneous	784	373	256	
17	Expense	292,231	290,181	317,009	373,200
18					
19	Net Revenue Over (Under) Expense	$6,196	$21,246	($5,410)	($37,850)

B. MEETING ATTENDANCE

Pre-registration 2009 (Chicago):	1,383	$256,800
Total registration 2009 (est):	**1,560**	**$316,000**
Pre-registration 2008 (San Diego) :	1,343	$214,856
Total registration 2008:	**1,447**	**$281,093**
Pre-registration 2007 (Philadelphia):	1,345	$234,000
Total registration 2007:	**1,507**	**$288,067**
Pre-registration 2006 (Houston):	1,241	$222,165
Total registration 2006:	**1,402**	**$274,350**
Pre-registration 2005 (San Diego):	1,451	$264,440
Total registration 2005:	**1,515**	**$297,750**
Pre-registration 2004 (Wash DC)	1470	$266,110
Total registration 2004:	**1,617**	**$313,645**
Pre-registration 2003 (Chicago):	1,488	$256,130
Total registration 2003:	**1,603**	**$283,270**
Pre-registration 2002 (San Diego):	1,219	$211,000
Total registration 2002:	**1,552**	**$290,170**
Pre-registration 2001 (Wash DC):	1,372	$240,240
Total registration 2001:	**1,627**	**$297,915**
Pre-registration 2000 (Pittsburgh):	1,083	$131,075
Total registration 2000:	**1,183**	**$167,005**
Pre-registration 1999 (Seattle):	1,142	$156,350
Total registration 1999:	**1,366**	**$191,425**

C.ACCOUNT BALANCES

C.1. Drosophila Main Fund

Meeting Year	Location	Net Income	Fund Balance*	# Meeting Attendees
1993	San Diego	$17,105	$ 25,146	1,165
1994	Chicago	2,800	27,946	1,222
1995	Atlanta	8,417	36,363	1,103
1996	San Diego	15,035	51,398	1,423
1997	Chicago	31,663	83,061	1,382
1998	Wash DC	21,522	104,583	1,378
1999	Seattle	(6,053)	98,530	1,366
2000	Pittsburgh	(56,060)	42,470	1,183
2001	Wash DC	71,656	114,126	1,627
2002	San Diego	60,661	174,787	1,552
2003	Chicago	(22,993)	151,794	1,603
2004	Wash DC	23,026	174,820	1,617
2005	San Diego	89,943	264,763	1,515
2006	Houston	6,196	270,959	1,402
2007	Philadelphia	16,663	287,622	1,507
2008	San Diego	(5,410)	282,212	1,447
2009	Chicago			

***** The GSA Board (Sept. 2003 meeting) established a required ~$150,000 *minimum* reserve fund (one-half of meeting expenses). No cap figure stated.

C. 2. Sandler Lecture Fund

Year	Investment Gain	Travel expenses	Supplies/ Mailing expenses	Net Income	**Balance**
1993				1417	25,964
1994				(451)	25,513
1995				1,595	27,108
1996				1,142	28,250
1997				1,119	29,369
1998				1,385	30,754
1999				877	31,631
2000				257	31,888
2001				(234)	31,654
2002				(846)	30,808
2003				(2,431)	28,377
2004				432	28,809
2005	1076	1,208	37	(169)	28,640
2006	1963	469	15	1,479	30,119
2007	2187	501	15	1,671	31,790
2008	-859	441	20	(1,320)	30,470

D. SUMMARY AND REMARKS

The **2008** meeting in San Diego resulted in a modest loss **($5,410**). This may appear surprising, as San Diego has been historically associated with inexpensive meeting costs and high attendance. In 2008, there were a few changes that resulted in this deficit. First, attendance was down by nearly 90 people, relative to historical values. Second, a networking lunch was added. Of note is that the full impact of the lunch is not reflected in this deficit, though, as Suzy Brown (GSA) was able to negotiate nearly $15,000 of cost saving measures (renegotiation of a contract).

The **2009** Chicago meeting has an early registration number of 1,383. Based on past records, a total of 1,560 attendees are projected. It is predict that with this attendance, the meeting will lose **~$39,000**. It should be noted that this loss does not reflect the free t-shirt, which was offset by a $10 increase in registration. The larger Chicago deficit results from the increased the cost of doing business in Chicago (a union town), coupled with high prices for food and beverages. While increased registration numbers lower the per person cost for fixed expenses like exhibits and a/v, it puts added pressure on venues such as the networking lunch. Currently, it will cost $31.00 for lunch (sandwich, soda, cookie, chips), which is ~$7,850 over the budgeted amount. With the projected 2009 loss, the Drosophila main fund will have **~$243,000**, which is **~$93,000** over the minimum required by GSA. It should be noted that the next meeting is in Washington, DC, another union town with high costs, suggesting that we might lose revenue again, further depleting our reserves.

The Sandler lecture endowment fund showed decrease in the past year, but maintains a healthy balance of ~$30,000. These are enough funds to continue its function of providing sufficient income to cover travel expenses for the Sandler lecturer.

Issues to discuss:

1. Whether the networking lunch should be continued—this is a two-year experiment begun last year in San Diego, so a decision will be made before the 2010 meeting. Suzy will craft a well-worded question on the meeting survey to gain input into the lunches success. For example: rate the lunch on a scale of 1 to 5 for its' networking value."

There was general agreement by the Board that the Networking Box lunch should be discontinued. There was, however, also a general consensus that the goal of the Networking lunch was worthwhile and that we should try to come up with another way to achieve this goal in future meetings.

2. How far in advance should we book hotels? Currently, we are booked until 2014. Suzy advises that we book at least 5 years in advance. Items to consider is whether the meeting attendance will remain at ~1,400 to 1,500 people and whether there are strategies to increase attendance.

This was approved by the Board.

3. Whether to change registration costs. Below is a chart of where we currently are compared to the fungal community. Currently, our structure is more expensive for PIs, but less expensive for other members of a laboratory than the fungal community.

The Board agreed that the current registration fees should remain in place for the next meeting.

Registration costs for Meetings in dollars

	GSA Member									GSA Non-Member								
	Faculty			Post-doc			Student			Faculty			Post-doc			Student		
	E	Adv	On	E	Adv	On	E	Adv	On	E	Adv	On	E	Adv	On	E	Adv	On
Fly	200	345	365	181	312	332	90	180	200	320	465	485	289	420	440	155	245	265
Fungal	225		275	200		250	170		220	385		435	305		350	260		310

Late additions: The wifi on our main meeting floor was cancelled due to the very high price ($10,000) and availability of complimentary access to wifi on the 2nd floor. There are printing stations there too. Since wifi was not promoted in any meeting materials and advance printing was encouraged, this should not cause too much of a problem. Our total a/v bill will be in the neighborhood of $90,000 due to high union fees. I had budgeted $60,000 (allowing for a $20,000 union fee). Our a/v company significantly reduced their prices and has a good relationship with the Chicago unions and will try to bring that cost down further by strict management on site. I am continuing to see where we can cut costs as always.

The second note is regarding the security certificate for uploading presentations. To date we have had over 50 presentations uploaded without any e-mails of concern to either Doc or me so hopefully that is a good sign. In response to the security certificate warning, here is Doc's response (and perhaps this should be included in the instructions next year if this system works):
This warning is there to notify the user that they are entering an encrypted web address. It confirms the additional level of security on this FTP Site. Since most web sites are not encrypted, the site could be entered in error and the browser is warning against that mistake. We want the encryption for the security of the information and thus users should proceed.

6. DROSOPHILA BOARD ELECTION REPORT (Trudy MacKay)

The Elections Committee consisted of Trudy Mackay (Chair), Amita Sehgal, Lori Wallrath, and two new members, Ken Burtis and Jessica Treisman. We collected suggestions from outgoing representatives and the committee members, and then ranked them based on previous involvement in the fly community or our perception of their ability to perform the job. The chair contacted the individuals selected by the committee to construct the final ballot. This year the website surveymonkey was used for the second time to make voting and vote counting easier, replacing the e-mail response system with manual vote count used in previous years. 397 people voted this year, roughly the same as last year (356), which is only about 13% of the ~3000 people contacted. This year short statements of research interests and links to the candidates' home pages were provided in the e-mail to the voters, in response to the Board's 2008 suggestion. Linda Restifo asked the Election Committee if Regional groupings can be reevaluated, questioning, for example, the inclusion of Arizona, Utah, and Colorado in the Heartland region.

The following letter was e-mailed to Drosophila researchers by Flybase to solicit votes.

Dear Drosophila researcher,
The time has come again to cast your vote for new members of the National Drosophila Board of Directors. As you are likely aware, the Board plays an important role for the Drosophila research community, so please take a few seconds to learn about the Board and cast your vote. The Board's duties include: overseeing community resource centers and addressing other research and resource issues that affect the entire Drosophila research community. The Board also administers the finances for the annual North America Drosophila Research Conference and its associated awards, and it chooses the organizers and the site of the annual meeting. The Board consists of 9 regional representatives, 8 from the U.S. and 1 from Canada, who serve 3-year terms. It also has 3 elected officers including a President, a President-Elect and a Treasurer. In addition, the Board has ex officio members, who represent Drosophila community resource centers or international Drosophila communities. For more information about the Board and the summaries of the annual Board meetings see:
http://flybase.bio.indiana.edu/static_pages/news/board.html

This year we are electing the President-elect, who will serve as President starting with the fly meeting in 2010. We are also electing representatives for the Mid-West, Heartland and Canada regions, who will serve 3-year terms starting with the fly meeting, March 2009.

Please participate in this election. It is your opportunity to choose the individuals who will help set priorities and garner support for community resources. In order to record your vote please go to the following URL and follow the instructions on that page.

http://www.surveymonkey.com/s.aspx?sm=4aJx_2fSxtkauFzMblUrZPGA_3d_3d

Please remember you may vote for candidates in ALL categories even though you do not reside in the region represented by the candidates. Balloting will end January 26, 2009.

Thank you,
Drosophila Board Election Committee
Trudy Mackay, Chair
Ken Burtis
Amita Sehgal
Jessica Treisman
Lori Wallrath

The surveymonkey ballot listed the following candidates:

President Elect (Vote for ONE)

John Carlson
http://www.biology.yale.edu/facultystaff/carlson.html
Department of Molecular, Cellular and Developmental Biology, Yale University
Research Interests: Molecular and genetic analysis of olfaction

Denise Montell
http://www.hopkinsmedicine.org/dmontell/
Department of Biological Chemistry, Johns Hopkins University School of Medicine
Research Interests: Genetics of cell motility and invasion

Mid-West (Vote for ONE)

Brian Calvi
http://www.bio.indiana.edu/facultyresearch/faculty/Calvi.html
Department of Biology, Indiana University
Research Interests: Cell cycle control of DNA replication and genome stability

Tom Neufeld
http://www.gcd.umn.edu/html/faculty_pages/neufeld.html
Department of Genetics, Cell Biology and Development, University of Minnesota
Research interests: Mechanisms of cell growth control

Heartland (vote for ONE)

Janice Fischer
http://web.biosci.utexas.edu/fischer_lab/
Section of Molecular Cell and Developmental Biology, Institute for Cell and Molecular Biology, University of Texas at Austin
Research interests: Regulation of Notch signaling pathway, Drosophila model of Angelman syndrome

Linda Restifo
http://www.neurobio.arizona.edu/faculty/restifo/index.php
Arizona Research Laboratories Division of Neurobiology, University of Arizona
Research interests: Genetics of brain development and neuronal plasticity; genetics of mental retardation

Canada (Vote for ONE)

Dorothea Godt
http://labs.csb.utoronto.ca/godt/godthome.html
Department of Cell and Systems Biology, University of Toronto
Research interests: Molecular genetic analysis of cell dynamics during development

Helen McNeill
http://www.lunenfeld.ca/mcneill/
Samuel Lunenfeld Research Institute, Mt. Sinai Hospital
Research interests: Genetic and molecular mechanisms underlying planar polarity

The votes were tallied by surveymonkey and Thom Kaufman, and the winners were:

Denise Montell for President-Elect March 2009 – March 2010
Tom Neufeld for Mid-West regional representative
Janice Fischer for Heartland regional representative
Helen McNeill for Canada representative

The next Election Committee chair is Utpal Banerjee. The President, Terry Orr-Weaver, should remind him to start the process in the fall.

Drosophila Board Master List (Spring 2008-2009)
flyboard@morgan.harvard.edu
Year indicates the last Fly Meeting through which Board Members will serve as Officers or Regional Reps.
Past-Presidents serve as members-at-large until the end of the indicated term.
Officers
Carl Thummel President 2012 carl.thummel@genetics.utah.edu
Terry Orr-Weaver President-elect 2013 weaver@wi.mit.edu
Utpal Banerjee Past-President 2011 banerjee@mbi.ucla.edu
Trudy MacKay Past-President & Elections Chair 2010 trudy_mackay@ncsu.edu
Mark Krasnow Past-President 2009 krasnow@cmgm.stanford.edu

Pam Geyer Treasurer 2012 pamela-geyer@uiowa.edu
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Howard Lipshitz Canada 2009 howard.lipshitz@utoronto.ca
A. Javier Lopez Great Lakes 2011 jlaa@andrew.cmu.edu
Hannele Rhohola-Baker Northwest 2011 hannele@u.washington.edu
Jeff Sekelsky Southeast 2011 sekelsky@unc.edu
Graeme Davis California 2010 gdavis@biochem.ucsf.edu
Susan Abmayr Heartland 2009 sma@stowers-institute.org
Leslie Griffith New England 2011 griffith@brandeis.edu
Liz Gavis Mid-Atlantic 2010 gavis@princeton.edu
Pam Geyer Midwest 2009 pamela-geyer@uiowa.edu
International Representatives
Phil Batterham Australia/Oceania 2010 P.Batterham@unimelb.edu.au
Vijay Raghavan Asia 2010 vijay@ncbs.res.in
Barry Dickson Europe 2010 dickson@imp.univie.ac.at
Ex Officio
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Susan Celniker BDGP celniker@fruitfly.org
Thom Kaufman Bl'ton S.C.& FlyBase kaufman@bio.indiana.edu
Kathy Matthews Bl'ton S.C.& FlyBase matthewk@indiana.edu
Kevin Cook Bl'ton S.C. & Nomenclature Comm. kcook@bio.indiana.edu
Teri Markow UC San Diego S.C. tmarkow@ucsd.edu
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Jim Thompson DIS jthompson@ou.edu
Michael Ashburner Europe ma11@gen.cam.ac.uk
Hugo Bellen Bl'ton S.C. Adv. Comm. & P element project hbellen@bcm.tmc.edu
Allan Spradling P-element project spradling@ciwemb.edu
Helen Salz Sandler Comm. hks@po.cwru.edu
Scott Hawley Nomenclature Comm rsh@stowers-institute.org
David Bilder Image competition bilder@socrates.berkeley.edu
Chuck Langley At large chlangley@ucdavis.edu
2009 Meeting Organizers
John Carlson john.carlson@yale.edu
Lynn Cooley lynn.cooley@yale.edu
Rick Fehon rfehon@uchicago.edu
2010 Meeting Organizers
Debbie Andrew dandrew@jhmi.edu
Mark Fortini fortini@ncifcrf.gov
Steve Hou shou@mail.ncifcrf.gov
Leslie Pick lpick@umd.edu

Two of the elections this year were very close. The Board decided that, in the case of a tie vote, the last vote to be registered would not be counted. This was done to encourage people to get their votes in promptly. There was also approval of Trudy's effort to provide links to the research webpage for each person being nominated. A suggestion was made to get the election process started earlier next year.

7. SANDLER AWARD COMMITTEE (John Carlson)

The Sandler Lectureship Committee is charged with choosing the top Drosophila thesis of a given calendar year. The person whose thesis is chosen is invited to give the Sandler Lecture on the first night of the fly meeting.

This year, the Sandler Committee's membership was:

John Carlson (Yale), Chair
Mariana Wolfner (Cornell), previous-Chair
Terry Orr-Weaver (MIT)

Robin Wharton (Ohio State Univ.)

Selection procedure:
In Fall '08, an e-mailed "call for nominations" was put out through GSA. It asked Fly PIs to nominate any student who had successfully defended (or would defend), during the 2008 calendar year, an outstanding thesis on any aspect of Drosophila biology. As in the past, nominations consisted of the candidate's CV and thesis abstract, and a letter from the thesis advisor. We received 22 nominations by Dec. 4, 2008. No institution was represented more than once, and nominees were from five countries (mostly US). Seven nominees were female; 16 were male (one nomination was a joint nomination for two students). Committee members read and ranked the nominations. Votes were submitted and tallied on Dec. 18, 2008. There was clear consensus on five Finalists.

Name of nominee	Nominated by (advisor)	Nominee's degree institution
Ayres, Janelle	David Schneider	Stanford
Bhutkar, Arjun	Bill Gelbart	Harvard
Bossuyt, Wouter	Bassem Hassan	Leuven School of Medicine, Belgium
Carrera, Ines	Jessica Treisman	NYU
Deng, Huai	Kristin Johansen	Iowa State
El Chamy, Laure	Jean-Marc Reichhart	IBMC, Strasbourg
Hare, Emily & Peterson, Brant	Marc Eisen (Two students; one nomination)	Berkeley
Hartl, Tom	**Giovanni Bosco**	**Univ. Arizona**
Kerman, Bilal	Deborah Andrew	Johns Hopkins
Lott, Susan	Marty Kreitman	Univ. Chicago
Mummery-Widmer, Jennifer	Juergen Knoblich	IMB, Vienna
Olsen, Shawn	**Rachel Wilson**	**Harvard**
Phadnis, Nitin	**Allen Orr**	**Rochester**
Rajan, Akhila	Hugo Bellen	Baylor
Richardson, Brian	Mary Baylies	Sloan-Kettering
Sackton, Tim	Andrew Clark	Cornell
Shi, Song	Willis Li	Rochester
Soto, Ignacio	Esteban Hasson	Universidad de Buenos Aires
Titen, Simon	Kent Golic	Univ. Utah
Weil, Tim	**Liz Gavis**	**Princeton**
Williams, Ben	Ting Wu	Harvard
Xu, Liu	**Ron Davis**	**Baylor**

Bold indicates Finalist

Theses of all five Finalists were sent to each Committee member (as .pdfs) by Dec. 21, 2008. Each committee member read all five theses. Creativity, productivity, scope, independence, and quality and impact of the work were all considered. All five theses were superb. They spanned a range of topics. We voted, and then held discussions, mostly by e-mail. It was very difficult to pick one winner from among such outstanding candidates but a consensus did emerge. The Lecturer, two tied runners-up, and the remaining Finalists were notified on Jan. 19, 2009.

The winner, runners-up and remaining Finalists are:

Winner:
Dr. Timothy Weil, who did his thesis with Elizabeth Gavis (Princeton). Thesis title was: "*bicoid* mRNA localization in *Drosophila* late oogenesis and early embryogenesis".

Tied runners-up:
Dr. Xu Liu, who did his thesis with Ron Davis (Baylor College of Medicine). Thesis title was: "The GABAergic system gates olfactory learning in *Drosophila*".

Dr. Shawn Olsen, who did his thesis with Rachel Wilson (Harvard Medical School). Thesis title was: "Synaptic and circuit mechanisms of odor processing in *Drosophila*".

Remaining Finalists:
Dr. Thomas Hartl , who did his thesis with Giovanni Bosco (Univ. of Arizona). Thesis title was: "Condensin II chromosome individualization is necessary for meiotic segregation and antagonizes interphase chromosome alignment".

Dr. Nitin Phadnis, who did his thesis with Allen Orr (Univ. Rochester). Thesis title was: "The molecular basis of dominance and the role of genetic conflict in speciation in *Drosophila*".

The 2009 Sandler Lecturer will be announced on the first night of the Fly Meeting. Dr. Weil will then present a seminar on his thesis work (he receives free travel, hotel and meeting registration; the two runners-up receive free meeting registration).

This year the Lecture has been shortened to 25 minutes, with 5 minutes for questions. This change was prompted in part because of the addition this year of the special 50th Anniversary Program, and in part because it was felt by the organizers and others they consulted that the Lecture could be shortened and still maintain its impact on the audience.

The Chair of the next Sandler Lectureship Committee is traditionally chosen from among people who have served as a member of this committee at some point. Robin Wharton has graciously agreed to be next year's Chair.

In the future it might be helpful to advance somewhat the deadline for nominations. The deadline this year was Dec. 4, and there was an unusually large number of nominations to evaluate. If the deadline were earlier there would be more time to evaluate them and obtain copies of the finalists' theses before the onset of winter break.

Previous Committee Members (to help future Chairs select new members):
2000 Committee:
Amy Bejsovec
Tom Cline
Joe Duffy
Chris Field
Janice Fischer
Scott Hawley
Bill Saxton (Chair)
Bill Sullivan (1999 Chair)

2001 Committee:
Laurel Raftery
Haig Keshishian
Susan Parkhurst
Bill Saxton (2000 Chair)
Lynn Cooley (Chair)

2002 Committee:
Steve DiNardo, UPenn (Chair)

Lynn Cooley, Yale Med (2001 Chair)
Chip Ferguson, U Chicago
Helen Salz, Case Western

2003 Committee:
Amanda Simcox, Ohio State (Chair)
Steve DiNardo, UPenn (2002 Chair)
Celeste Berg, University of Washington
Jin Jiang, UT Southwestern

2004 Committee:
Ross Cagan, Washington University (Chair)
Amanda Simcox, Ohio State (2003 Chair)
Susan Abmayr, Stowers Institute
Tom Clandinin, Stanford

2005 Committee:
Gerold Schubiger, University of Washington (Chair)
Ross Cagan, Washington University (Chair 2004)
Seth Blair, University of Wisconsin
Gertrud Schüpbach, Princeton University

2006 Committee
R. Scott Hawley, Stowers Institute (Chair)
Helen Salz, Case Western University (Chair 2007)
Kenneth Burtis, UC Davis
Susan Abmayr, Stowers Institute

2007 Commiteee
Helen Salz, Case Western Reserve University (Chair)
R. Scott Hawley, Stowers Institute (Chair, 2006)
Mariana Wolfner, Cornell University (Chair, 2008)
Jim Erickson, Texas A&M University

2008 Committee
Mariana Wolfner, Cornell University (Chair)
Helen Salz, Case Western Reserve University (Chair, 2007)
Trudi Schupbach, Princeton University
John Carlson, Yale University (Chair, 2009)

2009 Committee
John Carlson, Yale University (Chair)
Mariana Wolfner, Cornell University (Chair, 2008)
Terry Orr-Weaver, MIT
Robin Wharton, Ohio State University (Chair, 2010)

The Board was supportive of a shorter (30 minute) Sandler talk in future years. There was discussion regarding how much time it takes to read the theses that are submitted. A decision was reached to advance the deadline for Sandler award nominations from December 4 to November 1, and run the award on an annual basis from November to November.

8. IMAGE AWARD (David Bilder)

This year's competition received a record 51 submissions, including 6 videos that were accepted into

competition for the first time this year. The 2009 winner is:

Amy McMahon, for her image displaying live tracking of cell movements during gastrulation

This year's runners-up are:

-Tom Millard, for his video illustrating dynamic matching of epidermal cells during dorsal closure.
- Anandasankar Ray, for his composition illustrating expression patterns of odorant receptors.

Ross Cagan will make the Award presentation at the meeting.

The quality of finalist images remains excellent, and it was high time videos were included. Another successful year!

9. BLOOMINGTON STOCK CENTER (Kathy Matthews, Kevin Cook)

Bloomington Drosophila Stock Center Report to the Drosophila Board, March 2009. Prepared by Kathy Matthews, Kevin Cook and Thom Kaufman, with figures as of 2/18/09.

- Stocks held: 25,234
- Registered user groups: 2,260
- Registered users: 5,053
- Shipped in 2008: 165,284 subcultures in 13,464 shipments
- **Funding**: We are in year 5 of a 5 year grant from NSF+NIH, ~$470,000 direct costs this year. We expect to raise approximately $510,000 (excluding postage/courier costs) through cost-recovery in 2009. Increased income from user fees is paying for the growth of the collection. We have applied for renewed federal funding but don't have the results of proposal review yet.
- **Costs**:
    - Accession and maintenance account for ~70% of costs
        - Average cost per stock to accession: ~$28
        - Average cost per stock for annual maintenance: ~$23
    - Distribution accounts for ~30% of costs
- **New stocks**: We expect to add ~5,000–6,000 new stocks in 2009.
    - 1,000–1,200 GenExel P{EP} insertions via the GDP pipeline
    - 650–1,200 Minos insertions from GDP
    - 2,100 insertions of RNAi constructs from the TRiP
    - 200–250 Bloomington Deletion Project deficiencies
    - ~60 Bloomington Duplication Project duplications
    - 100–200 molecularly defined X duplications from the BBI consortium
    - ~150 inbred lines with whole genome sequence from Mackay & colleagues
    - ~200 RU486-inducible GeneSwitch insertions from Keshishian group
    - 400–500 stocks in all categories from the community at large
- **Culls**: We plan to remove ~2,500 stocks in three categories (this includes the number we planned to remove in 2008, which we are still working on):
    - Aberrations that have become largely obsolete
    - Effective redundancy and overlap in the insertion collection
    - Alleles of genes for which we have many alleles that are little used

10. GENOME DISRUPTION PROJECT (Hugo Bellen)

As many of you probably know, GenExel, a Korean company tried to compete in 2004-2007 with the GDP by generating numerous P-element insertions, sequencing them, and selling them to *Drosophila* labs. However, the vast majority of their P-element insertion collection overlapped with the GDP collection. Recently, they decided to donate their collection to the fly community and have it distributed via stockcenters. The GDP was eager to incorporate stocks that contain insertions in genes that were not previously hit in the core GDP collection and transfer them to the BSC. We (Allan Spradling and Bob Levis) screened their database and selected about 1,600 insertions that were absent or less favorable in our existing collection. Most of these were subsequently sent to our labs. Unfortunately, GenExel stocks were never balanced. We therefore rebalanced the stocks and sequenced the DNA next to the insertions (Roger Hoskins). About 80% of the insertions corresponded to what they originally documented and these balanced, verified stocks are currently being sent to BSC. This project will end in 2009. We estimate that this will add 720 new genes to the total coverage, and upgrade the quality of 580 others.

The first phase of the Minos project is now coming to an end. We generated and sequenced ~12,500 new insertion stocks. Because Minos inserts essentially randomly, we were able to select about 2,000 stocks that carry insertions in genes that were previously not hit. Most of these have been rebalanced and many resequenced. About 1,200 have been sent to the BSC. This project will end in 2009. Combined with all previous insertions, including the selected GenExel lines, we estimate that GDP will have characterized and sent the BSC insertion strains providing access to 9,200 (65%) of annotated fly genes.

We are currently generating insertions of the MIMIC transposable element which supports Recombination Mediated Cassette Exchange (RMCE see Bateman et al. 2006). This new vector allows one to insert DNA of any type with high efficiency into the site where MIMIC is inserted. As 25% of the MIMIC inserts are in introns, it will allow creation of gene traps with very high efficiency, gene fusions, tagging, etc.

In contrast to P-elements MIMIC has no insertional specificity and inserts essentially randomly. In addition, one should be able to remove or replace the DNA between two MIMIC elements that are up to 80 kB apart with P[acman] DNA, allowing manipulations of genes in their proper genomic context. We have created ~1,000 MIMIC-bearing stocks, sequenced ~500, and are now ramping up production. During the next two years we plan to generate an additional 10,000 MIMIC lines and transfer 4,000 widely distributed throughout the genome to the BSC. Approximately, 2,000 of these will replace GDP lines already present in BSC, but which are less versatile than the corresponding MIMIC insertions.

The P[acman] libraries

We (Hoskins and Bellen labs) constructed two *Drosophila melanogaster* genomic BAC libraries with average insert sizes of 21 kb and 83 kb in a P(acman) transformation vector (Venken et al., 2009). We mapped clones representing more than 12X genome coverage by aligning paired end sequences to the reference genome. The mapped libraries provide transformation- and recombineering-ready clones for more than 95% of annotated genes. The clones can be integrated in the *Drosophila* genome, using ΦC31 integrase or P transposase, and can rescue mutations in small, and large genes as well as heterochromatic genes. Recombineering allows manipulation of clones, including the incorporation of protein tags to reveal expression patterns. This new public resource is highly versatile, facilitating a broad range of experimental approaches in transgenic flies. The manuscript has been submitted and the clones will be made available via pacmanfly.org as soon as it is in press.

Koen J. T. Venken, Joseph W. Carlson, Karen L. Schulze, Hongling Pan, Yuchun H, Rebecca Spokony, Kenneth H. Wan, Maxim Koriabine, Pieter J. de Jong, Kevin P. White, Hugo J. Bellen and Roger A. Hoskins (2009) Versatile P(acman) BAC Libraries for Germ-Line Transformation Studies in *Drosophila melanogaster.*

The X-chromosome duplication project

This a joint venture between the Kaufman, Hoskins, and Bellen labs to create an overlapping set of 80 kb duplications for the X-chromosome using the 80kb P[acman] library clones. A set of 420 80kb clone has been selected to form a tiled pathway covering 99% of the X-chromosome. This collection will greatly facilitate characterization of essential genes, mapping, rescue, and manipulation of genes on the X-chromosome. By the time of the fly meeting (March 2009) about 100 clones should have been injected. This project should end in 2010.

Tagging thousands of *Drosophila* genes

We are planning to tag 1,000-5,000 genes present in the genomic P[acman] libraries with a sophisticated tag that should allow live imaging, protein purification, CHIP, and immunohistochemical staining in fixed tissue. Kevin White, Roger Hoskins,Chris Doe/ and the Bellen lab are collaborating in the creation of this library. The methodology is based on recombineering and utilizes positive-negative selection markers. The value of the tagged gene collection would be tremendously enhanced if they were
integrated into fly strains at attP docking sites and distributed to the research community. For example, lines bearing tagged genes would greatly facilitate efforts to construct an atlas of gene expression for every tissue at many different developmental stages. Several labs have expressed interest in such a project (Allan Spradling, Gerry Rubin, Roger Hoskins etc.) It is unclear if these strains could be accomodated at the BSC hence the project might require a new stock center. This project could be incorporated into a white paper.

Creating EMS induced stop codons in most essential genes on chromosomes containing an FRT

It is now possible to create a molecularly characterized collection of EMS induced mutations in essential genes on FRT chromosomes. For example, we mutagenized 8,000 males with low EMS concentrations (10-15 mM) to create 35,000 X-chromosome balanced stocks. Of these, about 20% carried mutations in essential genes (7,000 stocks). The remainder of the stocks were discarded. These 7,000 stocks were screened with eyeless-FLIP and allowed us to identify numerous mutations that cause overgrowth, eye loss, bristle loss, wing margin loss, ERG defects, neurodegenerative defects etc. We saved 2,000 homozygous lethal stocks and mapped 40% using large X-Y chromosome duplications to 300kb to 1MB intervals. We are currently using whole genome sequencing to identify the molecular lesion in the most interesting mutations. As we have many alleles of each complementation group we should be able to select an early stop codon for many essential genes. We propose that a genome-wide project be considered to produce stop codons in most essential fly genes on FRT chromosomes for public distribution. As sequencing costs are being halved every 6 months to a year, it is anticipated that sequencing a fly genome will soon cost less than $500.

11. FLYBASE (Bill Gelbart)

2008 was a very good year for FlyBase. The project is reaping dividends from the investment that FlyBase made in migrating to an integrated Chado database and to a completely new and more powerful public interface. Ten public releases occurred as planned during calendar year 2008 and we plan to adhere to this frequency of updates (roughly one every five weeks) for 2009 and beyond.

In January 2008, FlyBase submitted our 5 year competitive renewal to NHGRI. We are pleased to report that the application was very well-received (priority score 126) and that funding will continue for the period 01-01-2009 through 12-31-2013. While funding levels for 2009 are roughly flat, given the economic conditions and NIH budget, we are extremely appreciative of the level of commitment and continued support by NHGRI.

The FlyBase-Harvard (Bill Gelbart, PI), FlyBase-Indiana (Thom Kaufman and Kathy Matthews, co-PIs) and FlyBase-Cambridge (Nick Brown, co-PI) sites continue with their on-going responsibilities.

As part of NHGRI's commitment to bringing diversity to genome research, all large-scale funded projects are expected to have a minority action plan (MAP). We are pleased to report that NHGRI has funded what we believe is an innovative and important MAP at the newest FlyBase site (the University of New Mexico, Maggie Werner-Washburne, co-PI). In addition to training activities, FlyBase-UNM will be responsible for selective reannotation of the genomes of non-*melanogaster* species of *Drosophila*, focusing initially on *D. ananassae*, *D. pseudoobscura* and *D. virilis*.

A major thrust of the project is now to catch up and be current with the extensive and expanding Drosophila genetic/genomic literature (a very challenging goal!). We are making good progress toward this goal through a multi-level approach to literature curation. Furthermore, at the FlyBase presentations in Chicago, we will be introducing on-line forms for the research community to self-curate their primary research papers for a set of key information.

We continue to work closely with the BDGP and the modENCODE gene model annotation groups (Sue Celniker, PI) to provide a full and rigorous gene annotation set for the *D. melanogaster* genome. We are working closely with FlyExpress (Sudhir Kumar, PI) to annotate and present expression pattern data for embryonic stages. We are also working with a variety of high throughput *Drosophila* data providers to incorporate their information into FlyBase. Finally, we continue to work with numerous collaborators (other model organism database groups, the major nucleotide and protein sequence databanks, genome sequencing centers, pathway database groups, ontology groups, etc.) to coordinate and systematize our activities across organisms.

As always, FlyBase welcomes and is deeply grateful for input and feedback from the FlyBoard as well as from the broader community.

Respectfully submitted, Bill Gelbart, Nick Brown, Thom Kaufman, Kathy Matthews & Maggie Werner-Washburne

12. DROSOPHILA INFORMATION SERVICE (Jim Thompson)

Volume 91 (2008) of *Drosophila Information Service* was published on schedule in January 2009 with articles accepted during the 2008 calendar year. At 196 pages, it remains about the same size as other recent annual issues. As always, most contributions are received between mid November and the end of December in response to our traditional annual “Call for Papers”. The publication rate is, therefore, relatively rapid. While the number of research and technique articles remains strong, there seems to be a continuing increase in the submissions that describe genetic, cellular, or molecular activities suitable for classroom laboratory courses. Volume 91 will soon be freely available at our open web site, www.ou.edu/journals/dis. We are also preparing PDF files so that additional back issues can be archived and become freely available electronically on our web site. Linking these to key word searchable contents pages is planned for the summer. We now also provide free PDF copies of older articles by request. The turn-around time for the several dozen requests since last summer has usually been less than one day. The cost of this year’s printed issue remains unchanged at $12.00, and the shipping and handling costs did not increase this year. Submissions are accepted at any time. Manuscripts and orders can be sent to James N. Thompson, jr., Department of Zoology, University of Oklahoma, Norman, OK 73019; jthompson@ou.edu.

13. DROSOPHILA SPECIES STOCK CENTER (Teri Markow)

In 2008, what had been known since 2000 as the Tucson Stock Center moved to the University of California at San Diego. The move began in April of 2008 and was completed in August, five months later. At the new location, a new website https://stockcenter.ucsd.edu allows online ordering and provides stock center news. No longer the Tucson Stock Center, we are called the Drosophila Species Stock Center or DSSC.

The Drosophila Species Stock Center collection presently consists of 1812 stocks, representing 238 species. In 2008, the Tucson Stock Center acquired 74 new stocks from 26 species with the majority of the new stocks wild type *D. melanogaster* (27%) and marked and wild-type *D. yakuba* (13.5%). Unfortunately, 35 stocks were lost during the moving process. The DSSC has 55 stocks under taxonomic review/quarantine. These stocks will be included in the collection in 2009. Genomic DNA is available for all 12 sequenced species.

The stock collection has always consisted of a permanent collection of both ethanol-stored and living stocks. As of 10 Feb 2009, the ethanol-stored collection contains 229 wild type, 84 mutant, and 8 transgenic stocks. The living collection consists of 1127 wild-type stocks (includes both multi-female and isofemale lines), 277 mutant allele stocks, and 87 transgenic stocks.

Since 2006, we began to store adult flies at -80°C or 95% ethanol. As of February 12, 2009, the frozen collection has 321 stocks stored at -80°C and 193 stocks stored in 95% ethanol. By December 2009, each stock alive in the DSSC will have a preserved sample.

A varying number of recently caught isofemale lines have always been available on a temporary basis to our customers as living stocks. During the past few years, we have been making an effort to make these isofemale collections “permanently available” by storing adults in ethanol or at –80°C. For 2008, we added 155 isofemale lines from nine species to our ethanol collection of isofemale lines, bringing the total to 982 lines.

In November the annual Drosophila Species Workshop was offered at UCSD. Improved facilities allowed us to enroll 15 rather 12 participants. In addition, the center hosted a symposium dealing with the proposed nomenclatural and type specimen changes proposed by D. Kim van der Linde and presented to the board last year Fly Board members in attendance were Ashburner, Kaufman, and Markow. . A summary of these issues can be found in O’Grady and Markow 2009, Fly 3:10-14 and were reviewed in an article by Rex Dalton in Nature in January 2009.

In 2008, the center provided to the *Drosophila* research community with 1,272 stocks in 232 shipments with a diversity of 181 species. Because of the move, there was a period of approximately one month when no requests were filled. In the months immediately after the move, there were still stocks whose numbers did not allow requests to be filled. By October, the entire collection was again available. The majority of the stocks requested are of the sequenced species and their close relatives. Details of the stocks requested in 2008, both in Arizona and California, are presented in the tables below.

		TUCSON 1/1/08-7/15/08	SAN DIEGO 8/16/08-12/30/08	Total
Shipments	USA	119	59	178
Non-USA	35	19	54	
Total	154	78	232	
Stocks	USA	615	366	366
Non-USA	178	113	291	
Total	793	479	1272	

	TUCSON 1/1/08 to 7/15/08	SAN DIEGO 8/16/08 to 12/30/08
Total stocks shipped	793	479
Total species shipped	154	98

“Top 20” requests

D. melanogaster	141	**D. simulans**	52
D .simulans	86	*D. ananassae*	45
D. ananassae	50	*D. melanogaster*	42
D. mauritiana	41	*D. pseudoobscura*	36
D. sechellia	33	*D. yakuba*	26
D. pseudoobscura	32	*D. persimilis*	22
D. virilis	23	*D. willistoni*	22
D. willistoni	22	*D. sechellia*	21
D. mojavensis	20	*D. virilis*	16
D. persimilis	16	*D. erecta*	15
D. yakuba	14	*D. mauritiana*	15
D. erecta	11	*D. mojavensis*	14
D. hydei	7	*D. americana*	7
D. orena	7	*D. bipectinata*	7
D. affinis	6	*D. nannoptera*	6
D. borealis	5	*D. busckii*	4
D. funebris	5	*D. lummei*	4
D. repleta	5	*D. montana*	4
D. subobscura	5	*D. novamexicana*	4
D. americana	4	**D. arizonae**	3

14. KYOTO DROS. GENETIC RESOURCE CENTER (Masa-Toshi Yamamoto)

Drosophila Genetic Resource Center (DGRC), KYOTO STOCK CENTER, Kyoto, JAPAN

http://www.DGRC.kit.ac.jp/

http://www.DGRC.jp/

Report to the Drosophila Board (February 2009 prepared by Masa-Toshi Yamamoto), as of December 28th, 2008

The Drosophila Genetic Resource Center (DGRC) of Kyoto Institute of Technology (KIT) was established in 1999 as the national Drosophila Genetic Resource Center by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). Since 2002, the DGRC is the core institute for Drosophila resources of the National Bio-Resource Project (NBRP "Drosophila") run by MEXT and three sub-institutes, which are National Institute of Genetics, Ehime University, and Kyorin University. These institutes were joined to form the Drosophila-Group in order to help maintain a wide range of genetic resources, RNAi strains and Drosophila species other than D. melanogaster. The first NBRP was finished at the end of March, 2007, and consecutively the second five-year-project started from April 2007.

Stocks held: 38,217 (December 2008)

DGRC, Kyoto Inst. Technology: 23,168 (Basic strains: 4,000, Enhancer trap lines: 4,100, UAS expression lines: 4,900, FRT-lethal from UCLA: DrosDel from Cambridge: 500, pB-MARCM from Stanford:1,300, others: 3,000).

We are now starting to collect protein trap lines from Cambridge University.

National Institute of Genetics : 13,221 (All RNAi strains)

Ehime University: 846 strains of mostly Japanese 103 species

Kyorin University: 983 strains of mutants not melanogaster

Search and Order: All stocks we carry under the project can be searched through the internet site http://www.DGRC.jp/ in which users can find insertion sites of various insertion stocks and RNAi information.

You can make orders from us at the site. The “Search and Order” system is ready. We have a common entrance to register User ID and pay by credit cards. You can also visit either site, DGRC (http://kyotofly.kit.jp/ http://www.DGRC.kit.ac.jp/en/) or NIG (http://www.shigen.nig.ac.jp/fly/nigfly/index.jsp) to make orders. If you obtain your User ID at the either site above, you may order stocks from the other NBRP Drosophila-Group with the User ID.

Registered user groups: about 1,300. Registration has to be done every year.

New stocks: We are currently collecting the protein trap lines from Cambridge University. We will make no more large scale collection this year, but interesting and useful stocks are always welcome to be donated (Please refer to the site: http://www.dgrc.kit.ac.jp/about_dgrc/stock-deposition_e.html). We may ask for donation of stocks to the authors of scientific papers. If we have to consider a large scale collection, please notify that you have requests and information on the stocks through the Drosophila community or a group of researchers a few years ahead.

Other species: 1,829 lines (103 species collected in Japan, and mutant strains of 6 species) at Ehime University and Kyorin University.

Other resources: BAC libraries of 5 species (melanogaster, simulans, sechellia, ananassae, auraria), and cDNA libraries will be ready to be opened to the public.

Import permits: USA, Australia, Taiwan, and New Zealand require import permit. Please tell US fly people that the system is troublesome, but functioning well. We had no serious problem so far. We hope people in the US understand the system and check the information provided from http://flystocks.bio.indiana.edu/Regulatory/import.htm before making orders.

Since DGRC Kyoto itself is able to maintain about 50,000 stocks, we still have some more capacity to maintain new stocks. Dr. Kevin Cook visited us in November 2007 and therefore he can describe how we are doing for Drosophila research and researchers around the world.

15. TRANSGENIC RNAi (Stephanie Mohr)

The goal of the Transgenic RNAi Project (TRiP) at Harvard Medical School (HMS) is to generate about 6,500 transgenic lines using an optimized transgenic RNAi method that we have developed in the past few years. The project builds on an extremely successful pilot project that was funded for a period of two years by HHMI's Janelia Farm Visitor Program in Ashburn, VA. At Janelia Farm, we built and systematically tested a series of vectors for transgenic RNAi. Out of 17 different vectors, we selected VALIUM10 as the most optimal vector to generate hairpin constructs as it provides consistent, specific and robust knockdown in all somatic tissues (Ni et al., 2008; 2009). We are now in the production phase of the project and have already generated 2,300 TRiP stocks that are openly available either from the BDSC or the TRiP at HMS. We started distributing lines in September and have already sent over 800 stocks to more than 20 labs in the world. We expect to produce about 250 lines per month, and transfer 2,100 of these to BDSC in 2009.

Our move of the project from Janelia Farm, to new facilities within the Drosophila RNAi Screening Center (DRSC) at HMS went smoothly and involved the relocation of Dr. Jianquan Ni and Ms. Luping Liu who are in charge of generating the constructs, as well as the transfer of more than 2,000 stocks. We also set up a molecular and fly lab for the production, screening and housing of the TRiP stocks at HMS; hired technical staff; coordinated with the BDSC and FlyBase to ensure that the TRiP stocks are available to the community without delay; and transferred stocks to BDSC. Finally, we have established a screening center for community members who wish to screen the TRiP stocks at HMS.

Importantly, we created a website (http://flyrnai.org/TRiP-HOME.html) that describes the TRiP project, lists the lines available, collects nominations for genes to be targeted from the community.

Since January we have also initiated an educational program with undergraduate students at both MIT

and Harvard. The goal is to engage the students in screening the hairpin lines with various Gal4 lines and have them develop semi-independent research projects over the summer months that may develop into senior theses. So far nine students have already signed-up and initiated fly crosses, and three of them have already committed to spending the summer developing a project.

Publications:

Ni, J-Q., Markstein, M., Binari, R., Pfeiffer, B., Liu, L-P., Villalta, C., Booker, M., Perkins, L. A., and Perrimon, N. (2008) Vector and Parameters for Targeted Transgenic RNAi in Drosophila melanogaster. Nature Methods 5, 49-51.

Ni, J-Q., Liu, L-P., Binari, R., Handy, R., Markstein, M., Wang, H.,Villalta, C., Booker, M., Kim, H-S., Pfeiffer, B., Laverty, T., Perkins, L. A., Zuker, C. S., Rubin, G. M., and Perrimon, N. (2009) A Drosophila Resource of transgenic RNAi lines for Neurogenetics. To be submitted.

16. DROSOPHILA BOARD WHITE PAPER (Carl Thummel)

The first White Paper was written in 1999 by a Fly Board subcommittee led by Bill Gelbart. It was modified by a group that Laurie Tompkins organized for an NIH workshop in March 2000, and posted on the FlyBase Web site as the White Paper 2001. In 2002, the Fly Board decided that we should update the White Paper every two years, focusing on project goals and not individual projects. The White Paper has been updated every two years since then, a tradition that is scheduled to continue this year.

On January 22, 2009, I sent an email to the Drosophila Board, and on January 26, 2009 I sent an email to all members of the fly community, both requesting feedback and ideas on how best to update the White Paper.

Responses from the community focus on:

Antibodies – a number of people raised this as a top priority. Ideally, these would be monoclonal antibodies and potentially directed against proteins corresponding to all genes that have strong loss of function mutations. Kai Zinn notes: “I am particularly interested in this kind of project being included in the White Paper because I have proposed methods for directed generation of monoclonals in a couple of R21s, but these were never given high scores, partially because the reviewers: a) didn't think this was an important problem; b) did not see the generation of such monoclonal banks as a valuable service to the community.”

Stock center support

Transgenic lines that express tagged proteins

Consider deleting the last section that lists topics for possible R01 grant support. Dave Featherstone said “This list of relatively minor things sort of dilutes the importance of the main requests #1-8. Plus, I don't think it's really necessary to say what kind of R01s should be funded; the rationale for individual investigator-initiated projects should be able to stand on its own.”

David Stern suggests “we really need high quality genome sequences for the melanogaster group species (simulans, sechellia, mauritiana, yakuba, santomea, erecta). The 12 genome project was a good start, but an increasing number of investigators will need high quality complete sequences from these as they increasingly explore the evolution of gene function in non-melanogaster species.”

Volker Loeschcke (Aarhus University) suggests “for the Aarhus Drosophila group one of the main bottlenecks is the non-availability of a SNP - chip, so you can run a high number of SNP at one time for a reasonable price.”

From Sue Celniker: The heterochromatin grant will end in 2009 and cannot be renewed. We won't have assembled all the heterochromatin so I think it would be good to include something about sequence assembly of telomeres and centromeres etc of Drosophila melanogaster. It would also be good to maintain and update statements about proteomics resources.

From Hugo: How about tagging 5-8000 fly genes with a fluorescent marker like Cherry? Or a much more sophisticated marker (FIASH-RFP-FLAG-HA-STREP) to allow live imaging, EM, Chip etc? We have made two Pacman libraries and genes can be tagged easily with recombineering.
We are creating with Thom Kaufman a duplication kit with the 80 kb clones for the whole X-chromosome already (400-450 stocks). About 100 have been injected and 80 transgenes have been recovered already.

From Mark Biggin: I strongly support the broad goal of collecting more and better data images of gene expression patterns. The emphasis on the "take a picture and put it on the web" approach, however, is seriously outdated. For the long term health of the field, I would hope that image analysis based strategies that provide quantitative descriptions and allow computational analysis of gene expression and morphology should be strongly promoted. We have shown that it is possible to capture the location of every cell in Drosophila embryos in 3D and record the expression of all genes in each cell. Many terabytes of pixel image data can be condensed by image analysis to a few megabyte text file that records the relevant information….. This information can be viewed at any angle, displayed in a variety of ways, quantitative comparisons made, and cutting planes used to examine tissues at any depth…. Many quantitative features of developmental systems are not readily judged by eye, but can be detected and measured through this strategy. More importantly, such detailed information is a substrate for wide ranging computational modeling…. Many of the gene expression projects promoted in the last white paper are useful, but in Drosophila, worms and zebra fish, other groups are rapidly developing image analysis methods that undoubtedly can providing far more detailed information.

Need to Discuss:

1. Update list of recent achievements on pg 2 of White Paper 2007

2. Continue or modify three "resources that must continue":
   - Stock centers that provide a comprehensive range of genetically defined stocks at affordable costs are essential.
   - Expanded and improved electronic databases to capture and organize *Drosophila* data, and integrate the information with other databases used by the research community.
   - Continued support for a molecular stock center that provides the community with fair and equal access to an expanding set of key molecular resources at affordable costs.

3. Continue or modify five "high priority projects":

   - Functional analysis of the *Drosophila* genome. The most powerful advantage of *Drosophila* as a model system lies in the wide repertoire of genetic manipulations possible
   - Capturing temporal and spatial expression patterns for all *Drosophila* genes and proteins.
   - Production of comprehensive cDNA resources.
   - Functional annotation of *Drosophila* genomes.
   - Completion of the mapping, sequencing, and annotation of *Drosophila melanogaster* heterochromatin.

4. Delete or update "high priority needs that may best be met by R01 support":

   - Development of new methodologies that broaden the scope of the use of RNAi in *Drosophila* cells and whole animals.

- Development of new cell lines and molecular characterization of existing cell lines.
- Development of methods to understand the evolution of gene function.
- Generation of a well-characterized collection of conditional (ts lethal) mutants.
- Developing an efficient means of cryopreservation of *Drosophila* at any stage of development.

Discussion at the Board meeting focused on how to update the White Paper so that it would be of most use to the community over the upcoming 2-5 year period. Hugo pointed out that Laurie Tompkins (NIGMS) used the White Paper to identify specific projects that were in need of NIH support. Likewise, grant applicants could strengthen their applications by referring to specific parts of the White Paper. There was general agreement that the updated version should contain two main sections: resources and high priority projects. The third section in the current White Paper ("high priority needs that may best be met by R01 support") will be discontinued. The three resources – fly stock centers, electronic databases, and molecular stock center – will be continued and updated. The current five "high priority projects" will be reduced to two general areas – (1) functional analysis of the Drosophila genome, and (2) capturing temporal and spatial expression patterns for all Drosophila genes and proteins. There was significant discussion regarding how specifically the goals should be stated in the White Paper. It was decided that within the two broad areas, a bulleted list of specific goals would be outlined. Many of these goals are expected to advance both areas of research whereas some may be specific to one area or the other. There was discussion of the new funding opportunities arising from the NIH, but it was decided that most of these were too short-term to address the major goals of the fly community and thus would not directly impact how the White Paper was updated. Nonetheless, an effort will be made to get the update completed as early as possible this year. Carl will be contacting members of the Board to ask for their help in drafting the updated White Paper. He will, however, start by contacting Laurie Tompkins to get specific comments regarding what she would like to see in future versions of this document. As always, advice and input from the community is also essential to the successful updating of the White Paper.

17. ONGOING ISSUES/NEW BUSINESS

DROSOPHILA NOMENCLATURE (Teri Markow)

There was general support for how nomenclature issues were being addressed by the community and it was recommended that everyone to should read the recent paper by O'Grady and Markow, Fly 3:1, 10-14; January/February/March 2009, to learn the most current information in this area.

OPEN FLYBOOK (Lynn Cooley, Michael Ashburner)

The last decade has seen a dramatic shift in the nature of scientific publishing. The reasons for this shift are, largely, twofold. The first is that the technologies of the Internet, in particular of the WWW, have enabled new forms of publishing and have enhanced more traditional methods of publishing. The second is that the scientific community woke up to the fact that they, and their institutions, were not getting a good deal from many of the traditional (and commercial) publishers of scientific papers. Inspired, to some extent, by the Open Source movement in the software community, the community of biologists has pioneered new forms of Open Access platforms for scientific papers. This has influenced the appearance of sites that now provide open access to laboratory protocols (e.g. www.openwetware.org) and of open access books, for example the WormBook (www.wormbook.org) and the Arabidopsis Book (www.aspb.org/publications/arabidopsis/), as well as aggregators of open access content in the field of biology (e.g. www.bioone.org/).

These changes have been paralleled with technological change, for example the development of Wikimedia technology (and, of course, the well known products of this technology such as Wikipedia), and with the development of new semantic standards in the biosciences (obo.sf.net) that allow, or will allow, the rigorous semantic "markup" of scientific texts.

Inspired by the success of the WormBook, an Open Access book that deals with the biology of the nematode worm Caenorhabditis elegans (and its relatives) we propose the Open FlyBook, a book of reviews and methods that will cover the biology of the fruitfly Drosophila melanogaster and its relatives. Copying from the WormBook, the Open FlyBook will provide a comprehensive, open-access collection of original, peer-reviewed chapters covering topics related to the biology of Drosophila. It will also provide a compendium of methods for Drosophila research, collections of data and information that are outwith the scope of FlyBase (flybase.org), the community's database, and access to historical books, papers and images.

Terms of Access.

There are many different open source licenses now available (see www.opensource.org/). The WormBook is made available under a Creative Commons license (creativecommons.org/licenses/by/2.5/) that allows its content to be freely shared, freely adapted ("remixed") on the condition of attribution. The Open FlyBook will probably also adopt this widely used license, and will certainly adopt a license with similar intent.

Note that this license will allow a third party to republish all or part of the content of the Open FlyBook for profit, on the condition that the source of the material is acknowledged.

It is accepted that some content of the Open FlyBook (as with the WormBook) may be subject to other conditions. For example, a chapter in the Open FlyBook may (with permission) reuse an illustration that is copyright. As with any other publication it will be the responsibility of the authors to obtain any permissions that are needed to reproduce. Any re-user may also need to obtain copyright permissions for re-distribution.

Technology.

WormBook have developed a substantial technology platform for the management and distribution of the content of the WormBook. They have indicated their agreement that this will all be made available to the Open FlyBook free of charge. In the longer run we can see the Open FlyBook developing its own technology for its own needs. If so, this will be distributed under a suitable open source license, such as a GNU license (www.gnu.org/philosophy/free-sw.html).

Management.

It is envisaged that there will be an over-all Editor-in-Chief of the Open FlyBook with the responsibility of chairing and maintaining an Editorial Board. He or she will also have prime responsibility for fund raising.

There will be a full-time professional Editor who will report to the Editor-in-Chief. The prime responsibility of the Editor will be to ensure the flow of content into the Open FlyBook. He or she will work with the Editor-in-Chief, the Editorial Board, and authors. This person will be a PhD level Drosophila biologist, preferably with postdoctoral research experience.

There will an Editorial Board of professional biologists each with the responsibility (often shared with another) of a particular Section of the Open FlyBook. These will be unpaid and will be chosen by the founding group for their experience and expertise. It is expected that the final number of these will be of the order of twenty-five to thirty. These will be appointed, as will the Editor-in-Chief, on a rolling five-year term.

The Editor-in-Chief, the Editor and the Editorial Board constitute the management team of the Open FlyBook. They will meet in person annually (probably during the Annual Drosophila Research Conference) and as needed by remote means. They will be jointly responsible for ensuring the finances of the Open FlyBook and for ensuring the proper turnover of the Editorial Board.

There will be a Production Manager, responsible for turning the content of Chapters (and other material) into a publishable state. This person would also be responsible for website management, including adding content to the website, establishing the download system, installing and managing Wiki pages).

Finances.

It is estimated that the annual direct costs of the FlyBook will be of the order of $200,000 p.a., made up as follows:

Salary of Editor: $80,000.
Salary of Production Manager (0.5 FTE): $40,000.
Production costs, based on 50 chapters published a year: $50,000.

(The estimate of $1,000/chapter costs of from WormBook. The salary levels are guestimates the Editor may well have to be $100,000. These costs do not include any overhead.)

Business model.

There are two strands to the current business model. The first is a collaboration with a commercial academic publisher who would provide editorial and technical support for the production of the Open FlyBook and would provide access to a server from which the Open FlyBook would be accessed. The benefit to the publisher would be to draw people to this site, which would also include the publisher's own (pay-for-access) material. We have had encouraging discussions with one publisher.

The second strand is to rely on community contributions. We have had very informal talks with several possible funders and we would, in the first instance, be looking to raise of the order of $250,000 so as to allow three years of operation in the first instance. This would cover the salary of the Editor and is based on the model where the production costs are carried by our partner publisher. [In addition we have an agreement in principle that the costs of the Production Editor could be shared with the WormBook.]

Possible classes of funder include the professional societies and the charities. There may be some limited prospect of grant funding from national agencies, for example the National Library of Medicine or National Center for Research Resources.

The publication model.

The content of the Open FlyBook will be published as individual modules (e.g. Chapters) in both pdf and a markup format (e.g. an XML or HTML format, or both).

A major aim will be to semantically tag all of the content of individual modules, and to link these tags to appropriate external databases. It is envisaged that, at least, the following data elements will be so tagged: gene names and symbols (e.g. linked to FlyBase), references to the literature (linked to PubMed), references to sequences and other biological data (e.g. linked to GenBank/EMBL/DDBJ, UniProt, Geo, ArrayExpress), and terms from the Open Biomedical Ontologies (obo.sf.net) (linked to the appropriate ontology).

At the present the technology for ensuring semantic mark up is far from optimal, but we will collaborate closely with both NLP groups (such as at the MITRE Corporation and the European Bioinformatics Institute) and with those with experience in these methods (e.g. at the Royal Society for Chemistry in the UK).

We expect, over the next few years, there to be tools developed which will allow authors to semantically mark-up their text at the time of writing (e.g. by using an ontologically aware macro for Word, such as is

now in development in Cambridge (UK) and in San Diego (Phil Bourne). We will strive to be early adopters of such technology.

The content.

There will be several different classes of content in the Open FlyBook.

1. Expert reviews. These will be commissioned from experts in particular fields.

2. Methods. These will be commission modules that will make up a comprehensive laboratory methods book for Drosophila research. We will collaborate closely with the WormBook and, for example Open Wetware, so as to avoid duplication of efforts and, if possible, the sharing of content.

These two classes of content, expert reviews and methods are expected to be the primary core of the Open FlyBook. In addition, one can envisage further content:

3. Wiki pages. Each module of the Open FlyBook will have an accompanying Wiki page. This will allow any member of the community to comment on, add to or correct the content of any module (see below, Update cycle). In addition, of course, we would expect authors to contribute to the Wiki pages of their own chapters to add new information, correct errors etc between update cycles.

4. Images. We will collaborate with FlyBase to provide a comprehensive set of images of, for example, the anatomy of Drosophila. Whether these images are made available through FlyBase or the Open FlyBook (or both) is a matter for discussion

5. Taxonomy. We will attempt to provide, possibly in collaboration with others (e.g. the Encyclopedia of Life (www.eol.org) and the new Diptera site (diptera.myspecies.info/) to provide extensive illustrated descriptions of drosophilid taxa and associated data that now have no home in FlyBase (though this may change, in which case we would collaborate with FlyBase on this).

6. Previously published work. This includes two major classes of material, republishing in electronic (preferably marked-up) books previously published in the field. This will, of course, depend on copyright permission being granted from the appropriate holders. The other is of papers – again depending on copyright status. Although many thousands of scientific papers are now available electronically we can see an advantage in providing structured access to these, particularly if we can provide more that a simple image file. One possibility, for example, is to provide access (using the very comprehensive collection available in Cambridge (UK)) to all papers in the field now out of copyright and such others for which permission can be obtained.

Update cycle. A great advantage of this method of publishing is that it readily allows the updating of content. However, for some of the modules, particularly the expert reviews and methods modules continuous updating and re-publishing are clearly not economically feasible. We will institute a policy of a three-year update cycle, asking authors to revise their contributions over this period. We would expect them to take into account any user comments submitted through the relevant wiki page at the time of revision.

Proposed FlyBook Sections

1. Anatomy
2. Biochemistry & Physiology
3. Cell Biology
4. Development
5. Disease Models

6. Ecology & Evolution
7. Genetics & Genomics
8. Germline & Meiosis
9. Methods, Databases, Literature
10. Molecular Biology
11. Neurobiology
12. Sex Determination
13. Signal Transduction

Time scale for start up.

This will be rate limited by our ability to raise funds. We feel that we cannot hire staff without a guaranteed three-year time horizon. However, we would very much like to launch the Open FlyBook in 2009.

We thank Marty Chalfie and Paul Sternberg of the WormBook and members of the fly community for their input. We also thank John Inglis of Cold Spring Harbor Press for very productive discussions.

Michael Ashburner, Cambridge, UK
Lynn Cooley, Yale
R. Scott Hawley, Stowers
Brian Oliver, NIH
Gerry Rubin, HHMI
Allan Spradling, Carnegie
Paul Sternberg, CalTech

The board expressed its overall support for an Open FlyBook and encouraged its development.

FUTURE STOCK CENTER CAPACITY (Hugo Bellen)

A meeting of the Bloomington Stock Center Scientific Advisory Board was held in Bloomington Indiana (Amanda Simcox, Norbert Perrimon, Kevin Cook, Thom Kaufman, Kathy Matthews, Ken Burtis, Susan Parkhurst and Hugo Bellen attending). The main topics and concerns were space issues, the expansion of the stock center holdings, the pruning of existing collections, and cost recovery. We met with the Dean of the College of Arts and Sciences and the Chair and Associate Chair of the Department of Biology who agreed to provide additional space with the proviso that the Stock Center will have to pay for any needed renovation. The expansion of the stock center will require additional scientific personnel and the SAB agreed that another person in a position similar to that of Kevin and Kathy should be hired. The collection will be allowed to grow to 35,000 and existing portions of the current collection with low usage will be pruned or eliminated. The BSC is an exemplary stock center and we should all be grateful that Kevin, Kathy and Thom have been doing a great job.

One of the main issues that we are currently facing in the *Drosophila* Community is that new tools such as RNAi, P[acman], MIMIC, and GAL4 associated technology will produce more stocks that will have to be maintained and distributed to scientists worldwide. Yet, the capacity of the Bloomington Stock Center (BSC) will probably reach a point soon when many useful reagents will not be able to be maintained in that facility alone (the BSC maximum capacity is estimated at about 35,000 stocks, current holdings are close to 25,000). The BSC has committed to absorb an RNAi collection (Perrimon et al.) as well as some stocks from the gene disruption project (Bellen et al.) which will probably bring their collection close to maximal capacity, unless a new solution can be developed.

There are currently a few other stock centers, which are in operation that can be considered for maintenance and distribution of stocks. These include the Kyoto stock center in Japan, which is estimated to have a similar or only slightly larger maximal capacity as BSC (~40,000) and already houses more than 20,000 stocks. In addition, the European Stock center in Szeged also houses a significant collection of P-element insertion lines (estimate 5,000?) but its future is less than certain. Finally, the Atravanis-Tsakonas lab at Harvard holds and distributes the Exelixis collection (~16,000) but the future of this set of stocks is also in jeopardy and it may well be that this collection will have to transferred to Japan or India, be eliminated or partially transferred to BSC. The move of any significant collection of stocks outside the US creates the additional difficulty for US based researchers to get them back in view of the new import rules. In summary, the creation of any additional large collection will face a daunting problem: who will maintain the stocks and where will these collections be kept?

To provide an idea of the costs that are associated with the
maintenance and distribution of a collection of 10,000 stocks I created a series of cost estimates to help people who might be potentially interested. This was sent as an email to a few people last summer.

The costs to maintain a single stock in a single vial in Houston is as follows:

> Production of one vial including materials, fly food and labor in the Bellen lab is at a minimum 15¢/vial (scale is important as we prepare ~ 1,000,000 vials per year; the BSC cooks several millions). I estimate that 15¢/vial is a reasonable cost for most places in the US.
>
> Each stock must be transferred on average about 20 times a year if maintained at 18-19C, hence 20 X 15¢ = $3.0 per stock per year.
>
> The labor transfer costs are estimated (based on the cost structure in the Bellen lab) at 5¢/vial/transfer (this will vary greatly from lab to lab. My cost base is $10.0/hour including benefits). Hence, for 20 transfers per year we need to add an additional $1.0/stock/year.
>
> The total cost is therefore $4.0 per stock if one copy is kept.

Unfortunately, stocks need to be maintained in at least two copies, and each copy needs to be maintained in a different incubator controlled by a different electrical circuit (preferably in a different building) to avoid catastrophic losses and to allow the replacement of lost vials, subcultures etc. Hence, the total cost to maintain a stock, including labor is ~$8.00 (2 X $4.0)/year/stock. This implies that the basic costs associated with maintaining 10,000 stocks per year is ~$80,000 per year.

A stock center this size will need one person full time for distribution of the stocks and other tasks (Salary: $40-50,000/year including benefits). The cost of other personnel [cooking and transfer] is already included in the vial costs. I cannot estimate this cost in places other than Houston as this will again vary from place to place. In addition, the stock center will have to be managed by an experienced, PhD-level geneticist working part time ($60,000 including benefits). In Houston, these costs would therefore be approximately $100,000.

Hence, the total amounts to about $180,000 per year.

I estimate that all other costs could be accommodated with less than $50,000 per year. These include gas, water, electricity, rent, insurance, maintenance, capital replacement etc. The total for our location (Houston) for a collection of 10,000 strains would therefore

hover around $230,000 per year. Obviously, this may vary significantly, and every reader can now adapt the costs based on this model.

Finally, one needs an infrastructure, which one would hope would be built and developed by the University/Research Center that houses the collection. One will need three walk-in 18C rooms (~$120,000), microscopes (~$30,000), a packaging room (~$10,000), an office (~$5,000), and a large fly kitchen (~$50,000). This totals about $220,000. Total required space should be around 1,500 +/- 200 sq ft

Cost recovery.

There are three main possibilities:
All external support via grants, all cost recovery, or a mix of both. If we assume a full cost recovery strategy, we can envisage a few scenarios. The average stock is ordered once a year, implying that 10,000 subcultures are sent out per year: cost is $30 per stock. Obviously, if 20,000 subcultures are sent out per year the cost is only $15 per vial. The BSC stocks are sent out on average about 10X per year (~about $3/stock) but more specialized collections will never come close to this number as their utility is often more limited. A fair estimate would be 1-3 X/stock/year for 10 years and hence a cost of about $15/stock to recover costs.

I hope that this outline will provide you with a way to estimate your cost structure and I will be eager to talk to anyone who is considering setting up a stock center. There is obviously an advantage associated with a stock center, including name recognition, access to the collection for locals etc. In addition, these collections could be screened by visiting scholars and international scholars, thereby enhancing the scientific interaction and promoting collaborations as well as exchange of ideas within the fly community. Screening the collections locally would be much cheaper than sending 10,000 stocks, and would promote interactions and collaborations etc.

A portion of the above text was sent to various PIs and VJRaghavan (head NCBS) in Bangalore responded positively. There are currently preliminary plans to create a stock center at the NCBS (see emails from VJ to Utpal Banerjee and Carl Thummel – most recent below).

Begin forwarded message:
From: "K. VijayRaghavan" <kvijayraghavan@me.com>
Date: February 10, 2009 8:17:03 AM PST
To: "Banerjee, Utpal" <banerjee@mbi.ucla.edu>
Cc: "K. VijayRaghavan" <kvijayraghavan@me.com>
Subject: Re: Agenda for Fly Board Meeting

Dear Utpal
Thanks for your mail. I discussed this with Veronica and the bottomline is that you could simply say we are working on the concept. In brief though and for us there are two separate points that need to be fixed. First, both export and import of flies have become erratic for different sets of reason. post Mumbai is one reason and the other is that the new Banaglore aiport does not have a live- material inspection facility yet. All flies have to come and go via Mumbai and this causes delays and is a pain. Separately and o logistics, we are working on a trial run by dealling with setting up the Exelesis collection. We hope to have both set this year and a clear picture in about 6 months about the real likelihood of expanding into a screening facility. We now have the funds though for all of this, which is great. Hope this helps.
Best wishes
Vijay

Stock center capacity remains a major problem for the fly community. There is additional space available in some existing stock centers to fill short-term needs. There is a possibility for significant new space in Bangalore, India, although the recent terrorist attacks in Mumbai have only increased the difficulty of

transporting living material in and out of the country.

BOARD REPRESENTATION FOR UNDERGRADUATE INSTITUTIONS (Carl Thummel)

A letter was sent to me by Karen Hales, Associate Professor of Biology at Davidson College, representing a group of 14 faculty members who teach at primarily undergraduate institutions (PUIs). This letter is attached at the end of this document. They point out that, like us, they use Drosophila as a teaching tool and expose undergraduate students to the value of model organism research, preparing some of them for future careers in graduate school. Also like us, they have difficulty networking with other members of the fly community, and want to provide every opportunity possible for their students to attend the annual Drosophila Conference. They point out that in recent years they have organized an annual workshop at the Drosophila Conference on PUI research and pedagogy. These sessions have allowed undergraduates to present slide talks of their work and have connected current and future PUI faculty. The workshops have been well-received, and they intend to continue them. However, they discuss each year at these workshops the same unmet goals for making the conference a more productive experience for undergraduates.

They request:

1. Direct representation of PUI faculty on the Drosophila Board
2. For the Fly Meeting:
    - a separate registration category for undergraduates that is less expensive and that allows the identification of undergraduate posters.
    - establishment of funds for undergraduate travel grants.
    - explore ways in which local undergraduates, accompanying a full-paying attendee, could visit the meeting for a single day at low cost
    - incorporate into the conference an official event for undergraduate participants, including a poster session that enables graduate school recruiters to interact with prospective students.
    - establish a lecture given by a prominent researcher on a broad topic, geared for an undergraduate audience.

The Board expressed overwhelming support for adding a new member who would represent PUIs. This will be implemented by the new President for the upcoming year. The PUI representative could then present specific needs of the PUI community at future board meetings. This decision was forwarded to Karen Hales in time for the PUI workshop at the fly meeting. The Board was also in favor of offering a low registration fee for undergraduates who would like to participate in future fly meetings.