

FALL NEWSLETTER

November 2004

Elections are being conducted for President-Elect for 2005, Program Officer (2005-2007) and Member-at-Large (2005-2007). Please see the biographies at the end of the Newsletter and vote! E-mail ballots or snail-mail ballots will be accepted until December 17, 2004.

NOTES FROM THE PRESIDENT

As usual, your officers are late with this Newsletter. Let me amend that statement: your Acting President is late, and apologizes. However, the timing does have advantages, coming as it does within two months of our Annual Meeting in San Diego. One is the immediacy of officer elections, and I ask all of you to participate and return your ballots to Steve Gardiner. The strength of the Society is a function of its officers, and we have again have an excellent slate of candidates this year. I thank all of them for their willingness to run. Ruth Dewel and her committee have put together an excellent symposium, "The New Microscopy: Toward a Phylogenetic Synthesis", in which I hope you will all participate. Finally, I urge all of you – especially those of you who are also members of the Division of Invertebrate Zoology of SICB – to attend our Business Meeting at 9:30 on Friday. One issue that will be on the table is the relationship between DIZ and *Invertebrate Biology*.

This has been a very busy year for AMS, and for our journal. Elsewhere in this Newsletter Pat Reynolds has described the changes that have taken place with *Invertebrate Biology*. We have made the decision to enter into a publishing partnership with Blackwell International. As I noted in the Spring Newsletter, this was a difficult decision for us, as we have had a long and successful relationship with Allen Press. Allen Press / Alliance and John Wiley submitted competing proposals. In brief, our decision was based on a combination of editorial, marketing and web-based considerations. *IB* will now be on-line, and all members will have access to both the digital and printed versions; this will commence with the first issue of 2005. The financial arrangements include support for the Editorial staff, increased author support and a Special Projects Fund. See Pat's report for more details. Blackwell will also become involved with our website, and we plan to expand its functionality; on-line membership renewal is one example.

We look forward to working with our Blackwell partners in expanding the subscription base of the journal. They have strong marketing activities, particularly outside of the US, and make good use of consortial subscription arrangements.

We are all indebted to Pat for his efforts in initiating the addition of *IB* (as well as TAMS and its predecessor journals) to the on-line historical archive of JSTOR. This will include all issues up to the past five years (a “moving window”). Let me add my thanks to Pat’s and acknowledge the efforts of Bruce Coull, who has maintained a complete collection of the journal. It is this collection that has been sent to JSTOR for archiving.

The need for increased marketing underscores a distressing trend: we have been seeing a steady loss of membership over the past ten years. Membership in AMS, with the associated subscription to *Invertebrate Biology*, has been a remarkable bargain. The journal, with its high quality reproduction of micrographs, is not particularly inexpensive to produce. This year we had to increase subscription rates, and future increases are probably inevitable. We will try to hold the line on pricing as much as we can, certainly for students. Do suggest membership to your students and colleagues. Blackwell may have its marketing strengths, but it falls on us to build the individual membership base of AMS. So, with the coming of the holiday season, let me suggest that a suitable student gift would be an AMS membership. I can think of few things of equivalent cost that would have such lasting value.

Looking forward to seeing you all in San Diego,

Clay

Clayton B. Cook
Acting President

MESSAGE FROM THE EDITOR OF *INVERTEBRATE BIOLOGY*,

Patrick Reynolds

Invertebrate Biology celebrates 125 years of continuous publication next year, a couple of years after the 125th anniversary of the Society, but of course both Society and journal have gone through some name changes during that period. The first volume was published in 1880 under the title *Proceedings of the American Society of Microscopists* (vols. 1–13; 1880–1891), reporting on both the National Microscopical Congress (held August, 1878) and the meeting of the Society under its first official name, The American Society of Microscopists (held Aug. 1879). The journal title changed, to reflect the society's name change, to the *Proceedings of the American Microscopical Society* (vols. 14–16; 1892–1894), and later to the *Transactions of the American Microscopical Society* (vols. 17–113; 1895–1994). Most of us remember the latest transition to *Invertebrate Biology* (vols. 114–present; 1995–present), guided by the inspired editorship of Vicki Buchsbaum Pearse.

The volume of scientific discovery that is contained in the journal's legacy material is something that the Society should be proud of; the journal is one of the oldest biological scholarly journals in the country, preceded only by *The American Naturalist* (1867), *The Bulletin of the Torrey Botanical Society* (1870), and *Transactions of the American Fisheries Society* (1872) (as far as my research shows). The 125th anniversary of our journal's publication is a

fitting time to announce that, after initiating discussions and presenting our case, we have been invited to join JSTOR, the Scholarly Journal Archive. The entire run of the journal, continually updated to 5 years preceding the most recent issue, will be available online (PDF format) sometime early in the new year. A special word of thanks is due to Bruce Coull (University of South Carolina), who saved and has been caretaker of a complete run of the journal for AMS for a number of years. Furthermore, after the issues are scanned by JSTOR, they will be bound into volumes and donated to The American Philosophical Society, one of the country's oldest learned societies and whose library is a major national center for research in the history of science and technology. The APS library does not have our journal in its collections, and has agreed to accept the bound volumes and maintain them in perpetuity for future researchers.

This year saw some significant transitions in the Editorial Office; Susie Balsler joined the editorial team as Co-Editor, Vicki Pearse took a much-deserved leave from editing, and I continue as Editor next year, Vicki will continue to serve the society as President. We welcomed some new members of the Editorial Board, with our sincere appreciation to those Board members who have served one or more terms in the past.

It is also a significant year in terms of the journal's publication. Up to now, AMS has been the sole publisher of *IB*, contracting the printing of *IB* to Allen Press. As Clay Cook describes elsewhere, the Executive Committee evaluated a number of proposals from potential co-publishers and, after an extensive and thorough review process, the Committee decided on Blackwell Publishing as the company that could provide us with the best suite of publishing tools for the journal while maintaining the financial strength of the Society. This decision has exciting consequences for the journal, including online publication (PDF and full-text HTML on Blackwell's Synergy platform), options for online submission and review, indexing and access through more online databases and service providers, online membership/subscription renewal, and promotion of the journal to authors and libraries, the latter with a significant international component.

In addition, greater support will be given to authors: page charges will cease, there will be a limited number of color plates available without charge in each issue, and a free PDF of the article will be provided. We hope that this will encourage more submissions, particularly of studies requiring color figures such as those using confocal microscopy. While there will be changes in the cover design for 2005, other aspects of *IB*'s style and editorial policy will remain essentially unchanged.

Finally, while we recognized that revenues from the journal would have to increase to help defray the costs of improved access for readers, authors, and reviewers, the modest pricing of the journal to individuals and libraries was among our highest priorities in our considerations. Blackwell was the publisher that proposed the lowest price increases during the 5-year contractual term. The subscription rates for individuals (=membership fee) will remain unchanged for the coming year, and regular institutional subscription costs will increase from the current \$150 to \$175 in 2005, still one of the lowest-priced journals in our field. After that, any price increases will be limited to a 5% annual maximum (based on current page nos.), decided jointly between AMS and Blackwell.

I would like to thank all the members who have supported the journal in the past through submissions, reviewing, serving on the Editorial Board, and in other ways. I encourage you to continue to do so, especially during this transitional time. We look forward to receiving your manuscripts!

DR. ROBERT W. PENNAK (1912-2004)

**President of the American Microscopical Society (1956) and one of its few
Honorary Members**



Robert W. Pennak of 2513 East 104th Avenue, Apt 1201, Thornton, Colorado died on June 23, 2004. He was 92.

Dr. Pennak, a retired Professor of Biology at the University of Colorado, was born in Milwaukee, Wisconsin, on 13 June 1912. In 1935 he married Alberta V. Pope of Janesville, Wisconsin. The couple lived in Boulder from 1938 to 1987.

In 1938, upon finishing his Ph.D. degree at the University of Wisconsin, he joined the Biology faculty at the University of Colorado. Although he officially retired in 1974, he was permitted to keep his office and laboratory on the campus, and essentially every day until his recent illness, he kept busy with his research, field work, extensive correspondence, consultation contracts, and editorial work. During his many years with the University he served as Biology Department chairman for six years, as acting Graduate Dean for six months, and as Secretary of the Graduate Faculty for four years. He also served on innumerable University committees.

Dr. Pennak is known world-wide for his teaching and biological research on lakes and streams. He organized and taught the world's first university course in stream biology. He published about 150 articles in U. S. and foreign professional journals. His two books, "Freshwater Invertebrates of the United States" and "Collegiate Dictionary of Zoology," are widely used as text-references. The former has been generally acclaimed as a classic and has gone through more than 30 printings. He was active in 13 professional national and international societies and served as president of five of them. His name is to be found in many American and foreign biographical directories. At various times he served as editorial consultant or on the editorial board of 17 different professional journals. In 1950, at the age of 38, he gave the University of Colorado Annual Research Lecture, and in 1972 he was designated an Outstanding Educator of America. For seven years he was a member and Chairman of the National Science Foundation Graduate Fellowship Committee in Biology in Washington, D.C. Professor Pennak presented more than 90 research papers at learned societies, and more than 70 campuses invited him to give guest seminars for biology groups. He directed the work of 30 M.A. students and 17 Ph.D. students.

During his retirement years, Professor Pennak's services were widely in demand as a stream and lake consultant, including assignments for more than 30 corporations, public agencies,

land developers, fisheries agencies, mining operations, conservation agencies, and foreign governments.

Survivors include his wife, Alberta; a son, Richard Pennak, of California; and a daughter, Cathy Pennak, of Denver. Also surviving are two grandchildren and 2 great-grandchildren living in Denver.

Cremation promptly followed Dr. Pennak's death. It was his wish that there be no memorial service.

AMERICAN MICROSCOPICAL SOCIETY SUMMER RESEARCH FELLOWSHIP

Each year the American Microscopical Society funds a summer research fellowship in the amount of \$700. The funds may be used for any research project that involves microscopy. Any undergraduate or graduate student member of the Society is eligible to apply. The Fellowship Committee (Vicki Pearse, Clay Cook, and William Hummon), after evaluating 18 excellent applications, awarded the 2004 fellowship to Glen Elliott, whose report is below.

Look for a call for proposals for the 2005 summer research fellowship on the Society's web site following the Annual Meeting.

AMERICAN MICROSCOPICAL SOCIETY SUMMER RESEARCH FELLOWSHIP

REPORT FOR 2004

Glen R. D. Elliott – Department of Biological Sciences, University of Alberta, Canada

The contractile apparatus of the sneezing freshwater sponge, *Ephydatia muelleri*

Objective: To identify and observe the contractile apparatus found in myocytes that facilitate the sneezing behaviour of the freshwater sponge, *Ephydatia muelleri* by immunofluorescence, scanning electron microscopy and digital video time lapse microscopy.

Introduction: For over a century sponge researchers have studied sponge behaviour to better understand the origin of neural and muscular systems. Porifera — basal metazoan animals — were believed to consist of a loose network of cells that filtered water through a feeding mesh (Grant, 1825). Within the Metazoa, the Porifera is the only phylum that lacks a nervous and muscular system. Nevertheless, freshwater demosponges have a coordinated behaviour that is very like a slow sneeze: in response to specific stimuli they slowly expand and then rapidly contract the aquiferous canal system. Though early researchers tested sponge responses to tactile stimuli to determine whether sponge cells had characteristics of a neuromuscular system (Parker, 1910; McNair, 1923), they found that sponge contractions were not propagated and considered them to be local events (Mackie, 1979).

My studies on newly hatched (7-day old) sponges of *Ephydatia muelleri* have shown that stimulation - either shaking of the dish or dye suspended in the water - causes a characteristic sneezing behaviour to occur. The contractile response in juvenile freshwater sponges, however, is far more dramatic than that observed in marine sponges because the entire sponge juvenile participates. The response is slow (it occurs over 20-40 minutes), but several successive

contractions are indeed successful in removing inedible debris that the sponge has filtered out of the water.

Sponges have cells called myocytes that lie within an epithelial-like tissue that surrounds the osculum (Bagby, 1966) and presumably elsewhere. These cells are thought to be contractile, but there is no direct evidence of their role in contractions. Although two sizes of actin filaments have been labelled with heavy meromyosin in myocytes of the sponge osculum (Bagby, 1966), there has been no direct evidence of the role myocytes in the aquiferous system until now.

Methods: To identify and observe the contractile apparatus of myocytes found in sneezing sponges, I fixed 7 day old juvenile sponges at either a relaxed state or by shaking for one minute for the contracted state. The juvenile sponges after fixation were labelled with Bodipy 591 phalloidin (Molecular Probes) and imaged. Juvenile sponges were fixed for scanning electron microscopy in a relaxed and contracted state. Specimens were processed as either whole mounts or pieces fractured by liquid nitrogen for imaging.

Results & Discussion: Using fluorescent conjugated phalloidin to label filamentous actin in juvenile sponges, I found remarkable tracts of condensed actin filaments that span the length of elongate cells (Figure 1A). The actin filaments form dense plaques at the junction with adjacent cells, and are aligned along what appear to be tension lines towards the tips of spicules that project from the sponge's surface. Scanning electron microscopy of relaxed and contracted sponges shows fibroblast-like cells that lines the aquiferous canal system, pinacoderm and interlace with choanocyte chambers (Figure 1B). Cells with such condensed actin fibres have not been shown before in sponges. The location of these cells and their immense tracts of contractile filaments suggest they are responsible for the 'sneezing' behaviour. These results support century-old hypotheses that sponges possess a contractile and coordination system that predates the kind of muscle and nerves observed other basal metazoans.

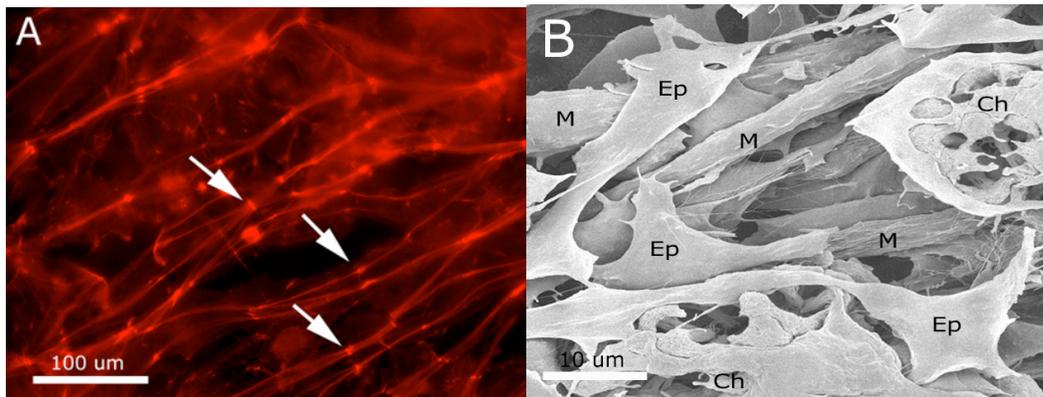


Figure 1. Epifluorescent and scanning electron images of myocytes located within the dermal membrane and aquiferous canal system of the freshwater sponge. A) Epifluorescent image showing condensed actin filament tracts of myocytes within the dermal membrane labelled with Bodipy 591 phalloidin; 'arrows' indicate dense plaques where cells join. Scale bar indicates 100 μm. B) Scanning electron image showing fibroblast myocyte cells that lie within the aquiferous canal system and interlace with the choanocyte chambers; M- myocytes, Ep – endopinacocyte; Ch- choanocyte chamber. Scale bar indicates 10 μm.

Fellowship Budget: The money awarded from this fellowship was used to buy fluorescent labels, scanning electron microscopy time, and confocal microscopy time. I thank the American Microscopy Society for their support and for the continued support of student research.

References:

- Bagby, R. M. 1966. The fine structure of myocytes in the sponges *Microciona prolifera* (Ellis and Solander) and *Tedania ignis* (Ducassaing and Michelotti). *Journal of Morphology* 118:167-182.
- Grant, R. E. 1825. Observations on the structure and functions of the sponge. *Edinburgh Philosophical Journal* 13:94-107.
- Mackie, G. O. 1979. Is there a conduction system in sponges? *Biologie des Spongiaires*. Edition du CNRS 291:145-151.
- McNair, G. T. 1923. Motor reactions of the fresh-water sponge, *Ephydatia fluviatilis*. *Biological Bulletin* 44:153-166.
- Parker, G. H. 1910. The reactions of sponges, with a consideration of the origin of the nervous system. *Journal of Experimental Zoology* 8:765-805.

ANNUAL MEETING OF THE AMERICAN MICROSCOPICAL SOCIETY

San Diego, California - January 4-8, 2005, at the Town & Country Hotel

The American Microscopical Society (AMS) holds its annual meetings jointly with meetings of the Society for Integrative and Comparative Biology (SICB, formerly American Society of Zoologists) and The Crustacean Society.

AMS sponsors contributed-paper sessions jointly with the SICB Division of Invertebrate Zoology at these meetings as well as symposia proposed by its members. The Society's annual Business meeting, past-presidential address, luncheon, and joint social with members of the Division of Invertebrate Zoology (DIZ) are also regularly scheduled in the annual meetings.

In addition to a diversity of SICB divisional symposia, other events to be offered by the meetings include workshops, educational opportunities, socials, and commercial exhibits. AMS will be among the exhibitors; all meeting participants are warmly invited to drop by our booth.

Information on registration, hotels, and other site-specific material for this year's and future meetings is available through SICB. For more information, contact **SICB Business Office** (e-mail: sicb@BurkInc.com; phone 800-955-1236 or 312-527-6697, fax 703-790-2672) or **AMS Program Officer** (Dr. Kathryn A. Coates, e-mail: kcoates@bbsr.edu, phone 441-297-1880 x216, fax 441-297-814).

AMS-Sponsored Symposium at January, 2005 Annual Meeting

"The New Microscopy: Toward a Phylogenetic Synthesis"

This is an AMS-sponsored special symposium, organized by Ruth Ann Dewel (Appalachian State University), Kathy Coates (Bermuda Biological Station), Mary Beth Thomas, Clay Cook (Harbor Branch Oceanographic Institution), and Julian Smith (Winthrop University). The SICB Division of Invertebrate Zoology (DIZ) is a cosponsor, as are DEE, DNB, DEDB, and DSEB. Selected topics:

1. Desiccation Tolerance in Animals, Microbes, and Plants: Comparative Mechanisms and Evolution
2. Terminal Addition, Segmentation, and the Evolution of Metazoan Body Plan Regionalization
3. WormNet: Recent Advances in Annelid Systematics, Development, and Evolution
4. Mating Systems and Sexual Selection in Hermaphrodites
5. Complex Life-histories in Marine Benthic Invertebrates: A Symposium in Memory of Larry McEdward
6. Crustacea of Ephemeral Wetlands and Crustacean Diapause in Variable Environments
7. Zoo-based Research and Conservation

THE RALPH AND MILDRED BUCHSBAUM PRIZE FOR EXCELLENCE IN PHOTOMICROGRAPHY

Do you have a favorite photomicrograph you'd like others to see? It could be the winner!

Date: January, 2005

Location: Annual Meeting of the American Microscopical Society with the Society for Integrative and Comparative Biology, Town & Country Resort and Conference Center, San Diego, California

Prize: the winning entries will be published in *Invertebrate Biology* and will also be featured in the American Microscopical Society Web site; other benefits will include a cash award and a copy of a new book describing pioneering struggles and methods in photomicrography by D. P. Wilson, the late English biologist, photographer, and author and close friend and colleague of the Buchsbaums: *SEA LIFE IN FOCUS, A Memoir by Douglas P. Wilson*, see <http://cmpress.co.uk/>

Contest Rules

1. The 2005 contest will include separate categories for color and for black and white photomicrographs.
2. Photomicrographs taken using transmission electron microscopy and scanning electron microscopy as well as any kind of light microscopy, including confocal scanning laser microscopy, are eligible. All meeting participants may submit up to 3 entries; AMS membership is welcomed but not required.
3. Submissions must be prints (no transparencies or digital files, please), with maximum dimensions of 8 X 10 inches, unlabeled and unsigned, and mounted on poster board or foam-core mounting board. Below the print, attach no more than one line of information briefly identifying the subject (e.g., "Mouthparts of a mite") and stating the microscopical technique (e.g., "SEM").
4. At the Annual Meeting entries will be accepted on the morning of the first full day of the meetings at the AMS exhibit in the exhibit hall, where they will be displayed as a group. The deadline for submitting entries is before the exhibits close for lunch that day. **Entries may be submitted early by mailing to Dr. Vicki Pearse, 183 Ocean View Blvd., Pacific Grove, CA 93950. Early entries must be received no later than 30 December 2004. Entries**

submitted by mail can not be returned.

5. Voting begins on the afternoon of that first meeting day and ends before exhibits close for lunch on the third day. All meeting participants who visit the AMS exhibit are allowed one ballot.
6. The winning entries in the color and black-and-white categories and entries awarded "Honorable Mention" will be determined by a tally of the ballots and will be announced at the AMS Luncheon.
7. All entries must be reclaimed on the afternoon of the third meeting day, before the exhibit hall closes.
8. The author retains all rights to the entry. If the image has been published previously, the author should obtain appropriate permission from the holder of the copyright.

Background

This contest is established as a memorial to Ralph Buchsbaum, a pioneer in cell and tissue culture of invertebrates and vertebrates and a champion of photomicrography of cells and unicellular organisms. He organized what may be the first televised broadcast of live material visualized through the microscope at CBS in the 1950s. The prize is intended to encourage scientists with interests and skills in microscopical-biological photography.

Contributions to the Ralph and Mildred Buchsbaum Fund are welcome. (Please address inquiries to Dr. Vicki Pearse, Long Marine Laboratory, 100 Shaffer Road, Santa Cruz, CA 95060; vpearse@ucsc.edu.) Income from the fund, beyond that needed for the photomicrography prize, will be used to supplement the summer fellowship for students and as additional funding for photography in the journal.

CANDIDATES FOR ELECTED OFFICES

Following is biographical information on candidates for the offices of President-Elect for 2005, Program Officer (2005-2007), and Member-at-Large (2005-2007).

For President-Elect for 2005

Michael W. Hart. Education: B.Sc. (Zoology), 1984, Univ. of Alberta; M.Sc. (Biology), 1987, Dalhousie Univ.; Ph.D. (Zoology), 1993, Univ. of Washington. **Postdoctoral research:** NSERC Fellow (Molecular Biology & Biochemistry), 1994-95, Simon Fraser Univ.; Research associate (Ecology & Evolution), 1996-98, Univ. of California, Davis. **Faculty appointments:** Assistant & Associate professor (Biology), 1998-2004, Dalhousie Univ.; Visiting professor (Biology), 2000, 2002, 2004, Univ. of Washington Friday Harbor Laboratories; Associate professor (Biological Sciences), 2004-present, Simon Fraser Univ. **Service:** Best paper committees for SICB (DIZ, DEE); Reviewer for mss. (*Evolution*, *Am. Nat.*, *Science*, *Proc. Roy. Soc. B*, *Biol. Bull.*, *Mar. Biol.*, *Mar. Ecol. Prog. Ser.*, *Am. Zool.*, *Mol. Phyl. Evol.*, *Dev. Genes Evol.*, *Evol. Dev.*, *J. Moll. Stud.*, and *Invertebrate Biology*) & grants (NSF, NSERC, Smithsonian); NSF panelist, 2004; ghost author (4 chapters) for *Evolutionary Analysis*, 2nd ed., 2000 (S. Freeman & J. C. Herron); **Memberships:** AMS, SICB (DIZ), SSB, SSE. **Teaching interests:** marine

invertebrate zoology; larval ecology; evolution. **Research interests:** molecular phylogenetics; population genetics; comparative embryology; ecology & evolution of larvae; fertilization & hybridization; cold fusion of phyla.

Carole S. Hickman. Education: B.A., 1964, Geology, Oberlin College; M.S., 1968, Geology, University of Oregon; Ph.D., 1975, Geology, Stanford University. **Positions:** Postdoctoral Researcher, Paleobiology, Smithsonian Institution, 1975-1976. Research Associate, Malacology, Academy of Natural Sciences of Philadelphia, 1976-1977. Assistant, Associate, Professor of Paleontology and Integrative Biology, Univ. Calif., Berkeley, 1978-Present. Curator of Invertebrate Paleontology, Univ. Calif. Museum of Paleontology, 1978-Present. **Service:** Associate Editor, Geological Society of America Bulletin, 1987-1989; Associate Editor, Evolution, 1990-1992; Editorial Board, The Veliger, 1979-2004; Editorial Board, Malacologia, 1990-present; Editorial Board, American Malacological Bulletin, 2003-present; NSF panels (various dates); Trustee, George D. Louderback Fund, 1980-present. **Awards and Fellowships:** Outstanding Paper Award, Journal of Paleontology, 1976; Cocos Lecturer, Duke University, 1984, 1992; NSF Midcareer Fellowship in Environmental Biology, 1993; Miller Research Professorship (Miller Institute for Basic Research in Science), 1994-1995; Whiteley Scholar, Helen Raiboff Whiteley Center, Friday Harbor Labs, 2003; Gilbert D. Harris Award, Paleontological Research Institution, 2003. **Memberships:** AAAS (Fellow), AMS, American Malacological Union/American Malacological Society (Past President), AIBS, Calif. Academy of Sciences (Fellow), California Malacozoological Society (Past President), Geological Society of America (Fellow), History of Earth Sciences Society, International Palaeontological Association, Institute of Malacology (Past President, Sponsor Member), Malacological Society of Australasia, Malacological Society of London, Paleontological Society (various offices and committees, including Past President, West Coast Section), Paleontological Research Institution (Life Member), Rocky Mountain Biological Laboratory (Life Member), SICB/ASZ (Past Chair, DSEB; various committees), Sigma Xi (Past President, Berkeley Chapter), Society of Economic Paleontologists and Mineralogists, Society for the Study of Evolution, Society of Woman Geographers, Unitas Malacologia, Western Society of Malacologists (various offices and committees). **Research Interests:** Functional and constructional morphology, microscopic anatomy, shell structure, and larval biology of marine gastropods; biomineralization; geomicrobiology; chemosymbioses at cold seeps and hydrothermal vents; systematics, evolution, biogeography, and paleoecology of Cenozoic mollusks; adaptations to life in seagrass ecosystems, conservation of partulid gastropods, recovery from mass extinctions.

For Program Officer (2005-2006)

Kathryn A. Coates. Education: B.Sc., 1974, Univ. of Toronto, Canada; M.Sc., 1979, and Ph.D., 1987, Univ. of Victoria, Canada. **Positions: Primary:** 1997-pres., Assoc. Research Scientist, Bermuda Biological Station for Research, Inc. **Other appointments:** 2004, Research Associate Bermuda Aquarium Museum and Zoo and Bermuda Zoological Society; 2001-pres., Adj. Assoc. Prof., Div. Coastal Syst. Sci. Pol., Nicholas School Env. Earth Sci., Duke Univ.; 1999-pres., Res. Assoc. Royal Ontario Museum, Toronto, Canada; 1998-2000, Acad. Ed. Advisor and Summer Course Coord., BBSR; 1989-pres., Adj. Prof., Zool., and 1992-pres., Grad. Fac., Univ. of Toronto; 1985-1987, Curatorial Fellow, 1987-1992, Asst. Curator, and 1992-1996, Assoc. Curator-in-Charge, Invert. Zool., Royal Ontario Museum. **Service:** Board of Governors,

Canadian Associates of BBS, 1996-pres.; Co-chair, Clitellate Annelids, Committee on Common Names of Aquatic Invertebrates, American Fisheries Society, 1989-pres. Editor, Aquatic Oligochaete Biology, Proceedings of International Symposia 5 through 7, 1991-1999; Editorial Advisory Board, Can. J. Zool., 1992-1996;; Grant Committee, Science Field Studies, Royal Ontario Museum, 1986-1994. **Memberships:** AMS, SICB/DIZ, NABS, AAZN, Biol. Soc. Wash., Can. Soc. Zool., Syst. Soc., **Research Interests:** Phylogeny, morphological and molecular systematics, and taxonomy of annelids, esp. marine and enchytraeid clitellates. Systematics and diversity of marine invertebrates of Bermuda. Population development and structure of (re)introduced marine gastropods. Seagrass meadow conservation.

For Member-at-Large (2005-2007)

John F. Pilger. Education: B.S., 1971, University of Southern California; Ph.D., 1977, University of Southern California. **Positions:** Smithsonian Postdoctoral Fellow, Smithsonian Marine Station, 1977-1979. Agnes Scott College: Assistant Professor, 1979-1986, Associate Professor, 1987-1995, Professor, 1996-2004; William R. Kenan Professor of Biology, 2004-present. **Service:** Secretary, SICB Division of Invertebrate Zoology, 1983-1985; Co-Chair ASZ/SICB Local Arrangements Committee for Annual Meetings, 1991 and 2000; SICB Education Council, Member, 1995-1998; Chair, 1998-2000. **Memberships:** SICB, AMS. **Research Interests:** Evolutionary Developmental biology. The relationships of *Hox* and *ParaHox* gene expression to axial patterning in echiurans and sipunculans.

Judith L. Williams. Education: B.S. in biology, Univ. of Southern Mississippi; M.S. in Zoology, Louisiana State University; Ph.D. in invertebrate zoology, University of South Carolina (1992). **Positions:** Post Doctoral Fellowship, American Heart Association, 1992-1994; Research Associate Professor and Lecturer, Marine Biology Program, Baruch Institute for Marine Biology and Ecology, Univ. of South Carolina, 1994-1996; Lecturer, Department of Biology, William Carey College on the Coast 1996-1998; Summer 1999, Visiting Professor, Histology, Louisiana State University; Lecturer –then Assistant Professor, Department of Biological Sciences, Univ. of Southern Miss Gulf Coast, 1999-present. **Memberships:** AMS, SICB, ASLO, Southeastern Microscopy, AWIS. **Research Interests:** invertebrate functional morphology and physiology, particularly copepods involved in long term dormancy (diapause).

ELECTION BALLOT

You may return your ballot by regular mail to: Stephen L. Gardiner, Department of Biology, Bryn Mawr College, 101 N. Merion Ave., Bryn Mawr, PA 19010-2899 USA; you may also return your ballot by e-mail to: sgardine@brynmawr.edu. Although sender address will be present on e-mail ballots, a signature is not required. Information on all ballots returned will be held strictly confidential. Deadline for receipt of all ballots is December 17, 2004.

President-Elect for 2005

Michael Hart _____ Carole S. Hickman _____ Abstain _____

Program Officer (2005-2006)

Kathryn Coates _____ Write-in* _____ Abstain _____

Member-at-Large (2005-2007)

John F. Pilger _____ Judith L. Williams _____ Abstain _____

*Please be certain that your write-in candidate would be willing to serve in this position.