



Education Section of The Ecological Society of America Newsletter



Volume 3, Issue 1
Spring 2004

Newsletter Highlights

Greetings Education Section of the Ecological Society of America! This year's newsletter features news from the Education Section, the Education and Human Resources Committee and the Education Office. In addition to many other pieces, it also contains program updates on projects including FIRST, SEEDS,

and TIEE. Another highlight is the preliminary program of education activities at this year's Annual Meeting in Portland, OR. Please also **be sure to look at the proposed amendments to the education section by-laws** (pp. 13-14), as voting on the changes will take place at the Education Section

Business Meeting at the Annual Meeting. Please note that **this year the business meeting and mixer will be separate events**. We hope you can make it to both! If there is anything you would like to contribute or if you have any suggestions for the next newsletter, please let us know!

News from the Education Section Chair

This is a very exciting time for ecology education. The number of ecologists around the country modifying their courses to help students gain lasting knowledge of ecological concepts is growing. Many are reporting the way students can better explain major ideas and more deeply understand ecological issues with these changes. We need to celebrate and learn from these achievements.

Major purposes of the Education Section include promoting and enhancing ecology education at all levels, disseminating ecology curricula and educational materials, and recognizing outstanding ecology educators. I want to bring to your attention to three items that address these goals.

The Education Section Mixer

Join us at the Education Section Mixer at the ESA Annual Meeting in

Portland! New this year - a raffle! Win great prizes - books, TIEE CDs, Experiments to Teach Ecology, special potables, and more! Each Education Section member will receive 2 free tickets, with more available for a small price to section members and non-members. (Let us know if you want to donate a prize!) Come and see old friends and meet new ones, and just have fun. Proceeds from the raffle will be used to enhance activities of the ESA and Ed Section including improving the web presence of the ecological education. Win a gold star for your name tag if you bring someone new to our section mixer. We'll also recognize outstanding ecology educators at the mixer.

The Education Section Website (a.k.a. EdWeb)

After many years of supporting our website, Bruce Grant deserves a break. We owe him many

thanks for all his great work! However, this means we need a new webmaster for the Education Section website, which is linked to the ESA Education site. Let us know if that might be you! We also need your continued support by adding new items to our website. Thus, we will hold a special raffle at the ESA mixer for those who contribute favorite ecology education URLs or offer web services, such as names of potential webmasters or students who might contribute web skills. Also - please submit syllabi to the ESA syllabus exchange so we can post them too.

The ESA Education Web Page

<http://www.esa.org/education/>
The ESA Education web-site, nicely revised in the last year, is a great resource. It is an excellent place to get ideas and useful tools for your courses.

(Continued on Page 2)

Inside this issue:

A Note from the Vice President of Education	2
Education and Human Resources Committee Update	3
Education Office News	
FIRST Project Update	4
SEEDS Program Update	5
TIEE Program Update	6
Women and Minorities in Ecology Subcommittee	7
Eugene P. Odum Award	8
Annual Meeting Preliminary Schedule of Events	9-10
Ecology Education Resources	11-12
Proposed Changes to the Education Section By-laws	13-14

Don't Forget!

- Nominate an outstanding educator for the 2005 Odum Award
- Check out the preliminary schedule of education events for the Annual Meeting (p. 9-10)
- Look at the proposed revisions to the Education Section By-laws (p. 13-14)

News from the Education Section Chair (*cont.*)

(Continued from page 1)

There you will find information on increasing diversity in ecology-related professions, informing students and the public about ecological research and issues, and enhancing ecology education at all levels.

For disseminating information about ecology and related fields, you'll

find brochures for high school and undergraduate students and information about the SEEDS program. There are links to a rich collection of educational resources, including fact sheets that explain ecological issues, links to engaging ecosystem services tool kits supported by CES & UCS, and access to editions of issues in ecology, in both Spanish and English. Also, there is

easy access to TIEE (Teaching Issues and Experiments in Ecology with innovative lecture and lab activities), EcoEdNet, Ecology 101, the "syllabus exchange" and the EcoEd List Serve. I encourage you to explore the site.

The Education Section's activities planned for the 2004 ESA Annual Meeting are listed in this newsletter. Please attend the environmental justice symposium, the

education paper and poster sessions, and workshops. We hope to see you at the section's business meeting Monday at 11:30 a.m. and also at the mixer on Monday evening.

Kathy Williams, Chair
San Diego State University
kwilliams@sciences.sdsu.edu.

A Note from the Vice President for Education and Human Resources

Education within the ESA is thriving and vital! Why is this so? ESA members are providing leadership for education initiatives that span ages (from preschool to elder hostel) and venues from formal education settings to nature centers, museums and even film. Some standout programs include "Teaching Issues in Ecology Education" (TIEE) and the Bioscience Education Network (BEN). Moreover, ESA members are at the table in important discussions related to standardized science tests that are mandated for K-12 students beginning in 2007.

The members of the Education Section have played a vital role in promoting ecological education since the section was established in the 1980's. And now more than ever your efforts are needed to ensure the highest quality

education for both future ecological scientists as well as ecologically literate citizens. The purpose of this Section, as articulated in the Education Section Charter nearly 20 years ago, is as relevant today as it was then: the Education Section "shall promote and enhance ecology education for students of all ages and for the general public; to facilitate the development and dissemination of ecology curricula, published educational materials, pedagogical ideas, and educational programs and projects of the highest quality; to provide information, encouragement, and assistance to anyone who teaches ecological concepts and principles; to advocate an appropriate emphasis on ecology education at all levels; and to recognize outstanding ecological educators."

There are many ways to participate in the activities of the Education Section. Now, more than ever before, we are looking for interested members to get more involved in education initiatives championed by the ESA. We need your input and feedback. Please take the time to let me know what you consider the three to four highest priority needs for action related to education and human resources within the Ecological Society of America and its Education Section.

I also invite you to contribute your ideas in these pages of the ESA Education Section Newsletter. In this issue you will find descriptions of ecological education programs, a profile of the 2003 recipient of the Odum Ecology Education Award winner, listings of recent publications related to ecological education, an overview of the upcoming annual meeting in

Portland, OR, and information about how you can become more involved in the education initiatives underway in the ESA. I hope we see your contributions in the next newsletter.

In the meantime, let Jason Taylor (Jason@esa.org), the ESA Education Director, and I know what you would like to see in the section newsletter. I will look forward to hearing from you and to your participation in the many education activities during the upcoming ESA meeting.

Best regards and see you in Portland,

Carol Brewer
VP for Education and Human Resources
University of Montana

(carol.brewer@umontana.edu)

Education and Human Resources Committee Update

The “Education and Human Resources Committee” (EHRC) is one of the very active standing committees of the Ecological Society of America. The committee is chaired by the Vice President for Education and Human Resources and charged with identifying and leading efforts within the Ecological Society to *“foster the development of a scientific community that embraces diversity and allows all professionals to flourish regardless of gender, racial, or cultural background.”* Committee members often are drawn from ESA members participating in activities of the Education Section (see list of current EHRC Members), and represent a diversity of ideas, experiences, and interests. Over the years, committee members have championed, proposed, endorsed and/or led activities that relate to teaching, equity, environmental justice, the annual meeting, and the ecological profession.

This year, EHRC has led

two important initiatives for the ESA. First, we have taken a retrospective look to document the progress of the ESA on issues related to recruitment and participation of groups who are underrepresented in the field of ecology. Specifically, the committee has looked at the recommendations that were made in the 1993 report on “Women and Minorities in Ecology”. The results of the committee’s work will be available in fall 2004. Second, we are about to launch a survey to evaluate the status of ecology in the undergraduate curriculum. Be on the lookout for a message directing you to the survey and please take the time to respond.

As members of the ESA and the Education Section, you are invited to propose new initiatives and to work with the EHRC committee to see them to fruition and completion. If you are interested, please send an e-mail message to Carol Brewer (ESA Vice President for EHR); carol.brewer@umontana.edu

and/or Jason Taylor (Education Director of the ESA; jason@esa.org). Jason and I look forward to hearing from you soon!

I also want to thank members of EHRC who have served their three-year terms and are rotating off of the committee in August 2004: Jesse Ford (Oregon State University), Sonia Ortega (LTER Education Director), and Dan Udovic (University of Oregon). Thank you all for your leadership and important service to the Ecological Society of America.

Carol Brewer

VP for Education and Human Resources
Committee Chair
University of Montana
carol.brewer@umontana.edu
Terms: 2000-2003, 2003-2006

EHRC Committee Members

Kathy Williams
Education Section Chair, 2004
San Diego State University
kwilliams@sunstroke.sdsu.edu

Jason Taylor

Education Director
Ecological Society of America
jason@esa.org

Charlene D’Avanzo

Hampshire College
cdavanzo@hampshire.edu
Term: 2004-2007

Karen Hollweg

NAAEE Governing Board
khollweg@stanfordalumni.org
Term: 2002-2005

Robin Kimmerer

SUNY–Syracuse
rkimmer@esf.edu
Term: 2002-2005

Ken Klemow

Wilkes University
kklemow@wilkes.edu
Term: 2003-2006

Janet Lanza

University of Arkansas at Little Rock
jxlanza@ualr.edu
Term: 2003-2006

John Moore

University of Northern Colorado
john.moore@unco.edu
Term: 2003-2006

Saran Twombly

University of Rhode Island
stwombly@uri.edu
Term: 2003-2005

News from the Education Office

This year has been a busy one for ESA education office staff. The education office develops and manages programs that aim to increase the diversity of ecology-related professions and improve the quality of ecology education at all levels. We have two full-time and one part-time staff and one intern, all dedicated to the Society’s ecological education programs. This

has enabled us to expand on our main education projects including EcoEdNet (Ecology Education Network), part of the BioSci Education Network (BEN), and SEEDS (Strategies for Ecology Education Development and Sustainability), as well as remaining active in education activities occurring both nationally and in the D.C. area.

Many new resources have been added to the EcoEdNet Digital Library; they may be used in many ways, some of which include incorporating images into lectures, reading reviews to decide on course materials, assigning articles for class discussions and journal clubs, and simulating lab experiences in preparation for hands-on live labs. We are always seeking more contributions to make the

library as comprehensive as possible. If you have resources to submit or would like to access those that are already available, visit: www.ecoed.net.

Linked to EcoEdNet is *Teaching Issues and Experiments in Ecology* (TIEE), which aims to improve teaching and student learning through innovative lecture and lab ... (Continued on Page 4)

News from the Education Office (cont.)

(cont. from page 3) activities, and to develop and disseminate peer-reviewed ecological educational curricula that undergraduate faculty can adopt and use. Two volumes are available online, and Volume 1 is now available on CD-ROM. For more information see the TIEE Program Update in this issue or check out the new website: tiee.ecoed.net.

The SEEDS program has taken off with new opportunities for students in addition to strengthening already existing ones. In spring 2003, three students were accepted to participate in the first offering of the SEEDS Undergraduate Research Fellowship—look for these students to present their research at the Annual Meeting in Portland! SEEDS also sponsored two student field trips, one to California in June, and the other to Baltimore, MD and

Washington, D.C. in November. Coming up in June, students will participate in a field trip to the Kananaskis Field Stations located in the front ranges of the Rocky Mountains in Canada. SEEDS also continues to support students' attendance at the Annual Meeting by providing travel awards to selected students as well as matching them with mentors and organizing both social and educational activities. SEEDS staff has also been busy visiting schools with SEEDS chapters and attending a number of scientific and minority focused meetings in order to promote SEEDS. In order to provide opportunities for students, as well as utilize the power of peer-recognition, one SEEDS student receives travel support to attend each meeting in return for help staffing booth space at

meetings. For more information about SEEDS, go to www.esa.org/seeds, or attend the Education Mosaic Mixer at the Annual Meeting which will feature SEEDS highlights.

The Education office staff also engages in many outreach activities such as dissemination of education materials through our website and mail. The newest fact sheet, which is about environmental justice, was recently printed, and is available upon request. This year we also participated in the MIST career fair; junior high and high school students from D.C. attended the event where they participated in an ecology lab and visited our booth to learn about careers in ecology.

For all of these activities to be successful, the education office relies on the

volunteer involvement of ESA members who provide their valuable time and expertise. I look forward to seeing you all at this year's Annual Meeting in Portland, OR, the perfect venue for sharing ideas and visions for the future of ecological education. For more information about how to get involved, please contact me or visit ESA's education site at: www.esa.org/education.

Jason Taylor,
ESA Education Director

Education Office Staff (May 2004)

Jason Taylor,
Education Director
(jason@esa.org)
Katherine Hoffman,
Education Coordinator
(katherine@esa.org)
Melissa Jurgensen-Armstrong,
SEEDS Regional Coordinator
(Melissa@esa.org)
Andrea Socha,
Education Intern
(educationintern@esa.org)

Faculty Institutes for Reforming Science Teaching (FIRST) Project

The 178 faculty involved in the Faculty Institutes for Reforming Science Teaching Project (FIRST II, funded by the NSF), are continuing their work to develop student-centered, inquiry-based courses and curricula to improve student learning. Approximately 400 courses are currently under revision including 30% Introductory Biology and 17% Ecology. During the 03-04 academic year the FIRST faculty teams participated in Field Station (FS) workshops that focused on assessment of student learning. To date, the most common assessments used by the FIRST faculty are extended response questions

(89% of faculty use), multiple-choice questions (75% of faculty use), laboratory reports (61% of faculty use), oral presentations (61% of faculty use), and think/pair/share activities (46% of faculty use). Several of this year's FS workshops explored concept tests and concept mapping. Other FS workshops focused on developing strategies for gaining external funding for course and curriculum reforms.

A second focus of FIRST II is to assess change in the teaching practices of the FIRST faculty over a two-year period during the project. A cohort of faculty from the

Field Station Teams are conducting this research using Reformed Teaching Observation Protocol (RTOP) developed by the Arizona Collaborative for Excellence in the Preparation of Teachers (for details, please see: <http://concept.net/rtop> as the observation instrument. The research design includes multiple observations of a representative sample of FIRST faculty from various types of institutions and departments in the project. We predict that if faculty change their teaching practice from passive transmission of information to active, inquiry-based

learning, more students will gain a deeper understanding of science based on evidence from assessment data. Further information on FIRST II can be found at:

<http://www.first2.org/>

This summer faculty members involved in the FIRST II project will be presenting workshops on inquiry-based active learning courses, including laboratories, at the ESA annual meeting.

Jan Hodder
jhodder@oimb.uoregon.edu

Diane Ebert-May
ebertmay@msu.edu



Strategies for Ecology Education, Development, and Sustainability (SEEDS) Program Update

The SEEDS (Strategies for Ecology Education, Development and Sustainability) Program has celebrated many accomplishments since the program received renewed funding from the Andrew W. Mellon Foundation in July 2002. As you may know, SEEDS works to increase the number of underrepresented minorities in the ecology profession by promoting ecology opportunities for underrepresented students and their faculty. Probably the most significant accomplishment is the number of student contacts SEEDS has gained in the past two years. Over 700 students have become aware of SEEDS through a variety of means such as becoming a member of one of the 18 SEEDS Chapters at minority serving institutions across the country, through meeting SEEDS staff at minority serving conferences, or simply through word of mouth.

Number of SEEDS student contacts and venue by which contact was made.

	2002	2003	2004	Total contacts / venue
Chapters	217	246 (additional)	TBD	463
Minority Serving Conferences	n/a	89	14 (to date)	103
Other (word of mouth)	36	51	20 (to date)	107
Total contacts per year	253	386	34 (to date)	721

The expansion of SEEDS has been successful and has enriched the program with a number of talented students with interest in the ecology profession. Evidence of this is seen in the applicant pools for SEEDS awards (Undergraduate Research Fellowship, student field trip, Annual Meeting travel), which have increased in quantity and quality from the beginning of the expansion, but especially since the original phase of SEEDS (1996 – 2001).

Number of Applications Received for SEEDS Awards since expansion.

	2002	2003	2004	Total apps. / award
Fellowship (up to 8 spaces)	n/a	7 (3 spaces filled)	23 (6 spaces filled)	30
Field Trips (25 spaces)	40	98 (total, two trips)	42 (first of two trips)	180
Annual Meeting (25 spaces)	32	43	51	126
Total apps. per year	72	148	116	336

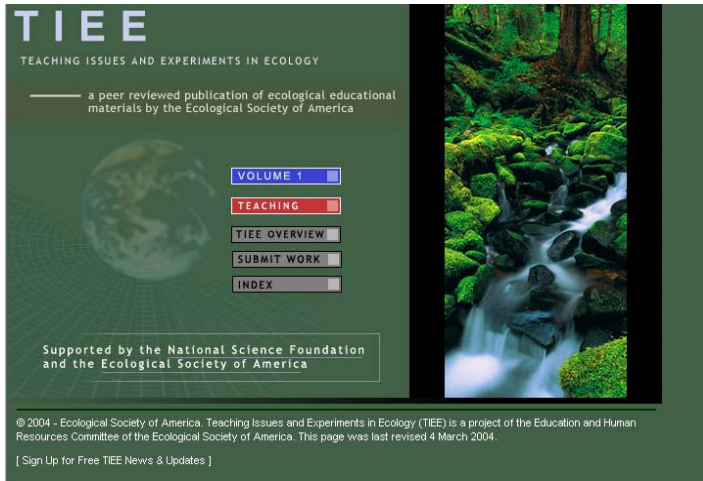
Also impressive is the number of ESA members and environmental professionals that have been involved with SEEDS, such as acting as: Fellowship mentors, Annual Meeting mentors, volunteers during a field trip, panel members during a field trip or as part of a presentation during a minority serving conference, members of a selection committee to review applications for various awards, and as members of the SEEDS Advisory Board with a two-year term.

Number of ESA members and environmental professionals involved in SEEDS.

	2002		2003		2004		Total/event
	ESA mem- ber	Env. Professional	ESA member	Env. Professional	ESA member	Env. Professional	
Fellowship	n/a	n/a	3	0	6	TBD	9
Field Trip	1		15	28	7(to date)	TBD	51
Annual Meeting	22	0	27	0	31	TBD	80
Minority Serving Conf.	n/a	n/a	1	4	TBD	TBD	5
Selection Committees	n/a	n/a			15	7	22
SEEDS Advisory Board	6	0	6	0	6	0	18
Total volunteers / year	29	0	52	32	65	7	185

In essence, SEEDS is having a growing impact on the nation's underrepresented students interested in ecology. Through the SEEDS mission, by stimulating the interest of underrepresented students in pursuing an ecology pathway, the SEEDS program attempts to bring a greater source of richness into the questions ecologists ask and the relevance of inquiries to all of society.

Teaching Issues and Experiments in Ecology (TIEE) Program Update



Welcome to TIEE Volume I. Our expectations for this and upcoming volumes are high – to improve university ecology teaching nationwide. To do so, we have developed a resource to help busy ecology faculty who are looking for new ways to reach their students, or who perhaps want to learn more about teaching and learning.

TIEE grew out of several ESA sessions about undergraduate teaching. In these meetings some faculty said that they wanted to actively involve their students more in classes, but didn't know how. Others knew there was a great deal of good information on the web but did not have the time to find it. Some experienced faculty already trying new ways to teach wanted to push themselves further.

The three sections of the Volume – Experiments, Issues, and Teaching – are designed to meet this broad range of needs. Experiments are for lab sections of

courses, and Issues can be used in lecture, lab, and for homework. There are many links from both Experiments and Issues to the Teaching section which also includes www resources, essays, and tutorials. The Index will help you find what you need quickly. You can print out the PDF files or use TIEE in class directly from the web or this CD.

Clearly, this is just a beginning. Future Volumes will expand the range of labs and Issue topics. We already have numerous submissions for Volume II and welcome more. In addition, if you have ideas for contributing something other than an Experiment or an Issue, please contact us. TIEE will grow with your input.

Since TIEE evolved from the Education section of ESA and ecologists are authors, reviewers, and users, it is very much a community effort. In addition to submitting to TIEE, we ask for your suggestions and critiques

The first volume of TIEE (Teaching Issues and Experiments in Ecology) was published by the ESA as a CD in March 2004. Over 300 members have already purchased the Volume and the ESA expects to sell many more copies at the Portland meeting. The URL for the new website is:

<http://www.tiee.ecoed.net/>

Below is the letter accompanying the new volume which includes an overview and a description. The Table of Contents is also listed. We are now working on Volume II and are looking for submissions plus reviewers. Please help us with this important and growing ESA effort.

Charlene D'Avanzo, Editor
cdavanzo@hampshire.edu

(please see the website).

Finally, we thank the generous support of the ESA who hosts TIEE on their website, helps organize workshops at annual meetings, and give us invaluable advise. We also thank the Division of Undergraduate Education at NSF for supporting development of the site and CD-ROM. Our advisory committee and editors have been very generous with their time and expertise.

Charlene D'Avanzo and Bruce Grant, Editors

Susan Musante, Managing Editor

Josh Riney, Web Technician

Jason Taylor, Director of Education, ESA



A student experimenting with Wisconsin Fast Plants at a field site, a component of a featured TIEE lab activity.

© Valerie A. Barko



The Women and Minorities in Ecology (WAMIE) Subcommittee

In 1993, a committee of 15 ESA members met to discuss a vision of the Society: to achieve a population of ecologists that reflects the gender and cultural diversity of the general population of the United States of America. This group produced a report presenting a set of activities to implement this vision; the activities ranged from immediate action items with no cost to long-term activities with significant cost. These action items included methods for recruitment and retention of under-represented groups in ecology based on the idea that the solution includes changing both the image of ecology and how it is taught at all levels of the educational system.

In February of 2004, just over 10 years after the original report was released, a new committee (a subcommittee of the Education and Human Resources Committee) was formed and met, along with ESA staff, to discuss which of the action items from the report have been implemented and summarize those that show progress towards ESA's goal of involving a broader population in ecological science.

Since the review of the report in February, committee members have been collecting data and documents to figure out why some recommendations were never implemented, why some didn't work, and if ESA has come any closer to its goal of creating a population of ecologists that reflects the population of

the United States. New ideas for mechanisms to increase recruitment and retention of women and under-represented groups in ecology have also been developed.

Members of the WAMIE committee convened again from May 18-20 to write a second report with specific information related to the progress of each of the recommendations made in the WAMIE I report. While this second document is still being drafted, a status report of the committee's progress has been written, highlights of which follow.

During this meeting, each of the recommendations made by WAMIE I was reviewed in light of data gathered on ESA membership and provided by the ESA office. The committee also reviewed the ESA 2000 survey (Chazdon *et al*) and learned that this survey was not designed to provide the type of information pertinent to our goals. For example, information on ethnic composition of ESA membership is missing. Also, no information was included on members with disabilities. The report, *Diversity, stability and evolution of professional ecologists*, that came out of this survey clearly refers to diversity as it pertains to areas of interest and the professional career choices that members make rather than looking at their gender, ethnic and cultural composition.

Since the WAMIE I report was published, ESA has made some significant progress in the following

areas:

- Undergraduate education – The creation of the SEEDS program, TIEE, and ESA education workshops
- Provision of child care at ESA meetings
- Addition of new staff at the ESA office
- Publication of *Frontiers* as a potential venue for publication of articles on education and women and minority issues
- Creation of the Education and Human Resources Committee (EHRC)

It was found that the WAMIE I report did not include recommendations about graduate education as it relates to women and minorities. The current WAMIE committee felt that Graduate students, postdoctoral fellows and young professionals who are at a critical stage in their careers deserve attention to ensure retention and advancement. A plan for the future must include their needs. Although significant activities have been accomplished by EHRC, predominantly in education, equal attention must be paid to the other two subcommittee areas originally recommended by WAMIE I: women and minorities.

The committee recognized that we face both challenges and opportunities for ESA to fulfill its vision of "achieving a population of ecologists that reflects the gender and cultural diversity of the general populations in the United States of America" and become a scientific society that others want to emulate. Therefore,

the WAMIE II report should be a comprehensive enterprise integrated within the larger vision of ESA. In order to accomplish this larger vision a process is needed to:

- Organize a workshop with a larger representation of ESA members to identify the critical issues and develop an action plan for the next decade in the context of Ecological Visions Report: *Ecological Science and Sustainability for a Crowded Planet* and scientific and cultural trends
- Develop a professional and comprehensive survey that includes questions that give us the information needed to make more informed recommendations
- Engage the ESA membership in ongoing dialogue and education on issues pertaining to women and minorities

The WAMIE committee will seek outside funding, but also recommends that the governing board provide resources to complete the above tasks.

For more information about the committee's activities or how you can be involved, contact the committee chair, Sonia Ortega (sortega@lternet.edu).

WAMIE Subcommittee:

Sonia Ortega, Chair
Alex Flecker, Leanne Jablonski, Jaymee Johnson-White, Robin Kimmerer, Muriel Poston

Ex officio members:

Carol Brewer, Katherine Hoffman, Melissa Jurgensen-Armstrong, Andrea Socha, Jason Taylor

Eugene P. Odum Award for Excellence in Ecology Education

The Eugene P. Odum Award for Excellence in Ecology Education recognizes an ecologist for outstanding teaching, outreach, and mentoring activities and for demonstrated ability to relate basic ecological principles to human affairs. The award was generously endowed by the distinguished ecologist Eugene P. Odum, Callaway Professor Emeritus of Ecology at the University of Georgia, Athens. The winner of the 2004 award will be announced at the annual meeting in Portland. Please consider nominating an outstanding ecological educator for the 2005 award; nominations will be accepted through December 2004. You can learn more about eligibility and the nomination process by contacting the Odum Award Subcommittee chair, Dr. Linda Wallace (lw Wallace@ou.edu).

The Odum Award winner for 2003 is Dr. Alan R. Berkowitz, of the Institute for Ecosystem Studies (IES) in Millbrook, New York. In the words of one Award Committee member, he is “the embodiment of an eminent ecology educator-scholar.” Alan Berkowitz began his career as an undergraduate at Antioch College in Yellow Springs, Ohio. From there, he had numerous ecological education experiences, including park naturalist and

resource manager at Grand Canyon National Park, and naturalist at High Rock Park Conservation Center in New York. Following completion of his PhD at Cornell University, he immediately assumed his current position as Head of Education at the IES. As an ecological educator, Dr. Berkowitz has had tremendous impact on the education of K–12 students, collegiate undergraduates, and the general public. He is the instigator and inspiration for numerous

ecological education initiatives, including the Ecology for Elementary Teachers program in which students and teachers study their immediate, familiar environment to learn ecological principles and processes. This program has had a tremendous effect on improving ecological literacy. He also has been quite active in NSF’s Research Experiences for Undergraduates (REU) program. Another group to receive the benefit of Alan



Dr. Alan Berkowitz, recipient of the 2003 Eugene P. Odum Award

“Alan is not only an exceptional teacher, or mentor, or the lead on an important ecology education program. He exemplifies the scholarship and intellect of an educator...”

“It is not often that we have such talent amongst us, and it is a most fitting acknowledgment to honor Dr. Berkowitz with the Odum Award.”

2003 Odum Award Subcommittee:
Linda L. Wallace (Chair),
Richard Bowden, Charlene D’Avanzo, Peter Feinsinger,
Bruce Grant, and Kathy Winnett-Murray.

Berkowitz’ enthusiasm for ecological education is the ESA itself. In this role he has been “...instrumental in convincing the Society that ecological education, as well as research, should be recognized more formally.” As one of the founders of ESA’s Education Section and one of the strong voices in bringing ecological education to the forefront of the science education programs at the NSF, Alan has used his wide range of skills to further this critically important agenda. Nominators and Odum Award subcommittee members were lavish in praise of Alan. A common theme was that his

contributions to ecology have been multifaceted and broad. One member wrote, “Alan is not only an exceptional teacher, or mentor, or the lead on an important ecology education program. He exemplifies the scholarship and intellect of an educator—and has been extremely successful at applying his political acumen and incredible energy to national, important and long term achievements in ecology education.” Others noted his excellent people skills and ability to work with a wide range of personalities and skill levels, signs of a quintessential educator. One

referee summed up his amazing accomplishments: “His curriculum vita demonstrates the breadth and depth of his work in the field of ecology. It is not often that we have such talent amongst us, and it is a most fitting acknowledgment to honor Dr. Berkowitz with the Odum Award.” It is with pleasure that the ESA presents Dr. Alan Berkowitz the 2003 Eugene P. Odum Award for Excellence in Ecological Education.

Don’t forget to submit nominations for the 2005 Odum Award!

August 1- 6, 2004
Portland, Oregon



ESA Annual Meeting
Preliminary Schedule of Education Activities, Symposia,
Workshops, and Discussions

Saturday, July 31, 2004

FT-4: Oregon Coastal Science and Education (Organizer: Menge) Departure 3 PM – Return Sunday 6 PM

WK-2: Teaching No Holds Barred Ecology to Elementary Students (Organizers: Fail/Hoffman) 8:30 AM to 4:30 PM
OCC Meeting Room B-110

SD-1: SEEDS Student Orientation Meeting, 9 AM to 11 AM Doubletree Lloyd Center Hotel –
Washington/Idaho Meeting Rooms

SD-2: SEEDS Outing: 11:30 AM to 3 PM

SD-3: SEEDS Faculty Meeting 3 PM to 4 PM Doubletree Lloyd Center Hotel Washington/Idaho Meeting Rooms

SD-4: SEEDS Faculty/Mentor Orientation 4 PM to 6 PM Doubletree Lloyd Center Hotel
Oregon Ballroom

SD-5: SEEDS Mixer and Buffet Dinner 6: PM to 9 PM Doubletree Lloyd Center Hotel Hood/Helens Ballrooms

Sunday, August 1, 2004

WK-5: Innovative Teaching and Active Learning in Ecology Classrooms and Laboratories (Organizers: Ebert-May/
Williams/Batzli/Hodder) (Endorsed by ESA's Education Section) 8:30 AM to 4:30 PM OCC Meeting Room B-116

WK-6: Using and Contributing to EcoEd Net: ESA's Digital Library for Ecology Education (Organizers: Klemow/
Taylor) 8:30 AM to 4:30 PM OCC Meeting Room B-117

WK-7: TIEE Author Workshop (Organizers: D'Avanzo/Grant) 8:30 AM to 4:30 PM OCC Meeting Room B-118

WK-10: Toward a Unified Ecology Curriculum (Organizers: Vaughn/Taylor) (Endorsed by Education Section) 8 AM
to NOON OCC Meeting Room B-114

WK-16: Science vs. Application in Undergraduate Wetland Science Education: What is the balance? (Organizers:
Yorks/Evans) 12:30 PM – 4:30 PM, OCC Meeting Room C-125

Monday, August 2, 2004

SD-6: SEEDS Mentors' Breakfast, 7 AM to 8 AM OCC Oregon Ballroom 201

WK-17: Education Section Business Meeting and Implementing the ESA Ecological Vision for Education (Organizers:
Mappin/Williams) (Workshop Registration includes Grab and Go Lunch Ticket GNG-A) 11:30 AM – 1:15 PM, OCC
Meeting Room A-105

ESA Education Section Mixer: 6:30 PM to 8 PM OCC Portland Ballroom 254

EV-10: Cross Cultural Mentoring Workshop (Organizers: Hoffman/Armstrong) 8 PM to 10 PM OCC Meeting Room
A-106

Tuesday, August 3, 2004

SD-7: SEEDS Advisory Board Meeting: 7 AM to 9 AM Meeting Room OCC Skyview Terrace Level 4 (*must take elevator*)

WK-18: Introduction to SEEDS Brown Bag Lunch (Organizers: Hoffman/Armstrong) (Workshop Registration includes Grab-and-Go Lunch ticket GNG-B), 11:30 AM to 1:15 PM OCC Meeting Room A-105

ESA Education & Human Resources Committee Lunch Meeting: 11:30 AM to 1:30 PM OCC Meeting Room F-149

Wednesday, August 4, 2004

OOS -16: Environmental Justice and Education. (Organizers: Jablonski/Nilon) *Endorsed by ESA's Education Section* 8 AM to 10:45 AM OCC Meeting Rooms E-141-142

DIS-2: Environmental Justice Education (Organizers: Jablonski/Nilon) NOON to 1:15 PM OCC Meeting Rooms E 141-142

TK-4: Education Mosaic Mixer "SEEDS Highlights" Reception and Program 6:30 to 8 PM OCC Portland Ballroom 254

Thursday, August 5, 2004

SD-8: SEEDS Participants Workshop: 8 AM to 11:30 AM OCC Meeting Room F-150

SD-9: SEEDS Wrap Up and Farewell 4 PM – 5 PM OCC Oregon Ballroom 201



www.esa.org/portland

PLEASE REFER TO THE OFFICIAL PROGRAM FOR EXACT DATES AND TIMES. THIS PRELIMINARY SCHEDULE IS DATED APRIL 2003 AND IS SUBJECT TO CHANGE.

Ecology Education Publications, Resources, and Research 2004

ESA Education Section and EcoEdNet members are actively engaged in scholarship and research in ecology education. The following is a **partial list** of ecology education articles and resources published in 2003-2004. If you have recent publications in ecology education that you would like to bring to the attention of the Education Section and EcoEdNet members, please forward citations to Jason Taylor (Jason@esa.org), Director of Education at ESA.

Publications 2003-2004:

- Berkowitz, A.R., C.H. Nilon and K.S. Hollweg, eds. 2003. *Understanding Urban Ecosystems: A New Frontier for Science and Education*. Springer-Verlag, New York.
- Bixby, J.A., J.R. Carpenter, P.L. Jerman, and B.C. Coull. 2003. Ecology on campus: Service learning in introductory environmental courses. *Journal of College Science Teaching* 32(5): 327-331.
- Blank, L. and C.A. Brewer, O. Lee and A. Lukyx, S. Barker and D. Slingsby, K. Hollweg, K. Comfort, and R.W. Bybee. 2003. Forum: Ecology education when no child is left behind. *Frontiers in Ecology and Environment* 1(7): 383-390.
- Brewer, C.A. and L.J. Gross. 2003. Training ecologists to think with uncertainty in mind. *Ecology* 84: 1412-1414.
- Brewer, C.A. 2003. Computers in the classroom: How information technology can improve conservation education. *Conservation Biology* 17: 1-6.
- Brown, S.C., G. Ferenz, M.E. Krasny and C. Tse. 2003. Implementing a 4-H aquatic resources education program in New York City through collaborations. *Journal of Extension* 41 (2). URL: <http://www.joe.org/joe/2003april/iw2.shtml>.
- D'Avanzo, C. 2003. Research on learning: Potential for improving college ecology teaching. *Frontiers in Ecology and Environment* 1(10): 533-540.
- D'Avanzo, C. 2003. Application of research on learning to college teaching: ecological examples. *Bioscience* 53(11): 1121-1128.
- Doyle, R. and M.E. Krasny. 2003. Participatory rural appraisal as an approach to environmental education in urban community gardens. *Environmental Education Research* 9 (1): 91-115.
- Ebert-May, D., J. Batzli, and H. Lim. 2003. Disciplinary research strategies for assessment of learning. *BioScience* 53(12): 1221-1228.
- Gift, N. and M.E. Krasny. 2003. The great fossil fiasco: Teaching about peer review. *American Biology Teacher* 65 (3): 270-278.
- Greer, L. and P.J. Heaney. (In Press.) Real-time analysis of student comprehension: An assessment of electronic student response technology in an introductory Earth Science course. *Journal of Geoscience Education*: 000-000 [Although focused on earth science; this approach could be used in ecology education.]
- Handelsman, J., D. Ebert-May, R. Beichner, P. Bruns, A. Chang, R. DeHaan, J. Gentile, S. Lauffer, J. Stewart, S. Tilghman, w. Wood. 2004. Scientific Teaching. *Science*. 304: 521-522
- Jenkins, E.W. 2003. Environmental education and the public understanding of science. *Frontiers in Ecology and Environment* 1 (8): 437-443.
- Kelly, M.G. 2003. *As the worm turns. Speciation and the Apple Maggot worm (Rhagoletis pomonella)*. The National Center for Case Study Teaching in Science. [Online] Student case URL: http://www.sciencecases.org/maggot_fly/maggot_fly.asp. Teaching notes URL: http://www.sciencecases.org/maggot_fly/maggot_fly_notes.asp.
- Kelly, M.G. (In Press.) Learning through discussion in a non-majors course in Environmental Biology. *Education*: 000-000.
- Kelly, M.G. and S. Terrana. 2004. A method to teach age-specific demography with field grown rapid cycling *Brassica rapa* (Wisconsin Fast Plants). *Journal of Natural Resources and Life Science Education* 33: 40-46.
- Krasny, M.E. 2003. An exploration of participatory methods in youth outreach program linked to university research. In Peters, S., N. Jordan and M. Adamek, eds. *Public Scholarship*. Kettering Foundation, Dayton, OH.
- Langen, T.A. 2004. What is right with 'teaching controversy' (A response to: Scott and Branch 2003). *Trends in Ecology and Evolution* 19: 114-115.
- Lauer, T.E. 2003. Conceptualizing ecology: A learning cycle approach. *The American Biology Teacher* 65 (7): 518-522.

Education Publications, Resources, and Research 2004 Continued

- Middendorf, G. and B. Grant, J. Cubit, G. Love, C. Nilon, G. Peterson, L.M. Jablonski and T.C. Poling. 2003. Forum: The challenge of environmental justice. *Frontiers in Ecology and the Environment* 1 (3): 154-160.
- Scott, E.C. and G. Branch. 2003. Evolution: What's wrong with 'teaching the controversy'? *Trends in Ecology and Evolution* 18: 499-502.
- Tessier, J.T. 2003. Applying plant identification skills to actively learn the scientific method. *American Biology Teacher* 65(1): 25-29.
- Trautmann, N.M. 2003. What can university scientists offer to K-12 schools? *The Volunteer Monitor* 15(1): 12-13.
- Wilson, K.A. and S.E. Hampton. 2004. Ecology teaching tips for first-year professors. *The Bulletin of the Ecological Society of America* 85(2): 22-30. [Online] URL: <http://www.esapubs.org/bulletin/current/bulletinapril2004.htm>

Teaching Resources 2003-2004:

- British Ecological Society. 2004. *The Teaching Ecology Newsletter* 29, Spring/Summer. [Online] URL: <http://www.britishecologicalsociety.org>.
- Carlsen, W.S., N.M. Trautmann, M.E. Krasny and C.M. Cunningham. 2004. *Watershed Dynamics – Student Edition and Teachers' Manual*. NSTA Press. Arlington, VA*.
- Dresner, M. and A. Moldenke. 2004. *Teachers in the Woods: Forest Ecology Research Experience*. [Online] URL: <http://www.cse.pdx.edu/forest/>. [This group is looking for additional collaborators for a new project: *Terrestrial Ecosystem Ecology Research* for High School Science for six sites across the U.S.; contact dresnem@pdx.edu.]
- Krasny, M.E., N. Trautmann, W. Carlsen and C. Cunningham 2003. *Invasion Ecology – Student Edition and Teachers' Guide*. NSTA Press. Arlington, VA*.
- Trautmann, N.M., M.E. Krasny, W.S. Carlsen and C.M. Cunningham. 2003. *Decay and Renewal – Student Edition and Teachers' Guide*. NSTA Press. Arlington, VA*. [* Designed to enable high school students to carry out their own experiments based on research protocols used by university scientists.]

Science Education Research 2003-2004 (related to Ecology Education):

- Pozzer, L.L. and W.-M. Roth. 2003. Prevalence, function, and structure of photographs in high school biology textbooks. *Journal of Research in Science Teaching* 40(10): 1089-1114. [An analysis of what students learn from textbook photographs; in this example, photographs linked with ecological concepts.]
- Trowbridge, J.E. and J.H. Wandersee. 2003. Identifying critical junctures in learning in a college course on evolution. *Journal of Research in Science Teaching* 40(S2003): S140-S154. [An influential research study on the use of concept mapping as an instructional and assessment strategy in college teaching; first published in 1994.]
- Wallace, C.S., M.Y. Tsoi, J. Calkin, and M. Darley. 2003. Learning from inquiry-based laboratories in nonmajor biology: An interpretive study of the relationships among inquiry experience, epistemologies, and conceptual growth. *Journal of Research in Science Teaching* 40(10): 986-1024. [An interpretive study of students' conceptual growth in a college biology lab on lake ecology for nonmajors.]

Other Resources (highlighted by EcoEdNet members):

- Journal of Natural Resources and Life Sciences Education: An International Journal*. Published by American Society of Agronomy. [Online] URL: <http://www.jnrise.org/> [The Ecological Society of America is cooperating society for this journal.]
- Garbisch, E. 2003. *The Do's and Don'ts of Wetland Construction*. Environmental Concern Inc. St. Michaels, MD.
- Ripple, K.L. and E.W. Garbisch. 2000. *POW! The Planning of Wetlands: An Educator's Guide*. Environmental Concern Inc. St. Michaels, MD.
- Uno, G. 1999. [Handbook on Teaching Undergraduate Science Courses: A Survival Training Manual](#). Thomson Custom Publishing. [Although published in 1999; a number of EcoEdNet members suggested that this publication should be highlighted for new faculty.]

PROPOSED AMENDMENTS AND CHANGES TO THE BY-LAWS OF THE EDUCATION SECTION: VOTE TO BE MADE IN AUGUST AT THE ESA ANNUAL MEETING

In 2002, a group of members of the Education Section went to work on updating the By-Laws of the Education Section. The reasons for this activity were to provide greater continuity between section leaders, to ensure greater synergy between initiatives of the Education Section and the Education and Human Resources Committee, and to provide substantial cost savings through the use of the internet, electronic mail and web pages instead of using paper and stamps for communication. The recommended changes in the By-Laws come as a seconded motion by a task force of section members (Carol Brewer, Jesse Ford, Bruce Grant, Karen Hollweg, Janet Lanza, Michael Mappin, Charlie Nilon, Saran Twombly, and Kathy Williams).

The significant changes are:

- Terms of the Chair and Secretary-Treasurer will be two years instead of one year
- There will no longer be a “past Chair” position because the term of the chair will be extended by one year
- Communication (including voting) will occur via e-mail and result in a cost savings to the ESA and Education Section
- The term of section officers will begin and end on the same calendar as the term of other officers of the ESA (annual meeting cycle instead of Jan 1 – Dec 31)

During the Business Meeting at the annual ESA meeting in Portland, the section chair will call for a vote to approve the recommended changes. At least 20 members are required to be present for consideration of this legislative action (i.e., Article 14). The proposed changes to the By-Laws of the Education Section are shown below. All members of the Section also will receive a separate message regarding this proposed change. Note that wording to be stricken from the By-Laws is shown with a line through the text. Replacement text is shown in capital letters.

By-Laws of the Education section of the Ecological Society of America

Article 1. Name: The official name of this Section shall be “The Education Section of the Ecological Society of America”.

Article 2. Purpose: The purpose of this Section shall be to promote and enhance ecology education for students of all ages and for the general public; to facilitate the development and dissemination of ecology curricula, published educational materials, pedagogical ideas, and educational programs and projects of the highest quality; to provide information, encouragement, and assistance to anyone who teaches ecological concepts and principles; to advocate an appropriate emphasis on ecology education at all levels; and to recognize ~~those who provide outstanding instruction in ecology~~ ECOLOGICAL EDUCATORS.

Article 3. Organization: The Education Section shall be a subdivision of the Ecological Society of America and shall be governed by the Constitution and By-Laws of that Society.

Article 4. Members: Any person who wishes to become a member of the Education Section must be a member in good standing of the Ecological Society of America AND MUST HAVE PAID THE ANNUAL EDUCATION SECTION DUES. ~~Notice in writing to the Secretary of the Section and payment of the annual dues as required by the Society shall be the only other requirements of membership.~~

Article 5. Officers and Elections: The officers of the Education Section shall be a Chairperson, CHAIRPERSON-ELECT AND Secretary-TREASURER ~~and Past Chairperson~~. The term of each officer shall be TWO YEARS BEGINNING AT THE END OF THE EDUCATION SECTION BUSINESS MEETING AT THE ANNUAL MEETING OF THE SOCIETY IN THE YEAR IN WHICH THEY WERE ELECTED AND ENDING AT THE CONCLUSION OF THE BUSINESS MEETING AT THE ANNUAL MEETING TWO YEARS HENCE. ELECTIONS FOR CHAIRPERSON-ELECT AND SECRETARY-TREASURER WILL BE HELD IN ALTERNATE YEARS. THE SECTIONAL EXECUTIVE COMMITTEE SHALL BE CHARGED EACH YEAR WITH NOMINATING AT LEAST ONE CANDIDATE FOR THE OPEN OFFICE. SECTION MEMBERS MAY MAKE NOMINATIONS FOR THE OPEN OFFICE TO THE EXECUTIVE COMMITTEE UNTIL APRIL 20 EACH YEAR. ~~one year, beginning January 1 and ending December 31, inclusive. Nominations for Chairperson Elect and Secretary shall be made between 1 January and 30 June by the executive committee. The Executive Committee shall nominate at least two candidates for each office each year. The slate of nominees shall be mailed to section members at least 30 days before the annual meeting. Additional nominations may be made to the Executive Committee by petition of five or more members, either at the annual meeting or within 30 days thereafter. Written ballots shall be sent to all members within 60 days of after the annual business meeting.~~ THE SLATE OF NOMINEES FOR AN OPEN OFFICE WILL BE SENT BY ELECTRONIC MAIL TO ALL CURRENT MEMBERS OF THE SECTION BY MAY 1 EACH YEAR. THE VOTING PERIOD WILL CLOSE AT MIDNIGHT MAY 31. MEMBERS PREFERRING TO VOTE BY PAPER BALLOT AND POSTAL MAIL MAY REQUEST A BALLOT FROM THE SECTION SECRETARY-TREASURE BEFORE APRIL 20 EACH YEAR. The candidates ~~for each office~~ receiving the greatest number of votes shall be declared the winner. The Chairperson-elect shall become Chairperson after one year. ~~After serving as Chairperson for one year, he/she shall become Past Chairperson for one year.~~ A current Chairperson-Elect or Chairperson shall not be eligible for nomination to Chairperson-Elect.

Article 6. Duties of Chairperson: The Chairperson shall preside at the business meeting of the Section, authorize expenditures of Section funds, and promote the interests of the Section. THE CHAIRPERSON MAY BE ASKED BY THE VICE PRESIDENT FOR EDUCATION AND HUMAN RESOURCES OF THE ECOLOGICAL SOCIETY OF AMERICA TO SERVE AS THE LIASON BETWEEN THE SECTION AND THE STANDING COMMITTEE ON EDUCATION AND HUMAN RESOURCES. He/she shall represent the Section on the Council of the Society TO REPORT OF SECTION ACTIVITIES TO THE GOVERNING BOARD OF THE SOCIETY, shall serve as a member of the Sectional Executive Committee, and shall MAY appoint committees as required to promote the interests of the Section. Such committees shall serve until the next annual meeting of the Section and may be re-appointed at the discretion of the Chairperson.

Article 7. ~~Duties of the Past Chairperson: The Past Chairperson shall serve as a member of the Sectional Executive Committee, shall serve as an advisor to the Chairperson, and shall assume the duties of the Chairperson whenever the Chairperson is unable to serve.~~ THE EXECUTIVE COMMITTEE OF THE SECTION SHALL APPOINT A WEBMASTER WHO IS RESPONSIBLE FOR MAINTAINING THE SECTION WEBSITE, AND SHALL APPOINT A NEWSLETTER EDITOR WHO IS RESPONSIBLE FOR ORGANIZING THE PUBLICAITON OF THE SECTION NEWSLETTER.

Article 8. Duties of the Chairperson-Elect: The Chairperson-Elect shall ~~be the program officer and shall arrange symposia and workshops~~ serve on the Sectional Executive Committee, shall serve as an advisor to the Chairperson, and shall assume the duties of the Chairperson in the event that both the Chairperson and Past Chairperson are IS unable to serve.

Article 9. Duties of the Secretary-TREASURER: The Secretary-TREASURER shall keep the records of the Section, including current membership and mailing lists. The Secretary shall attend the annual business meeting, AND TAKE MINUTES AND PUBLISH THEM ON THE SECTION WEBSITE IN A TIMELY MANNER and report on the activities of the Section annually in the BULLETIN of the Society. The Secretary-TREASURER shall also serve as Treasurer and is responsible for corresponding with the Society Business manager concerning expenditures made in connection with official Section business. The Secretary shall perform such other duties as may from time to time be assigned to him/her.

Article 10. Finances: The necessary expenses of the section shall be paid from the treasury of the Society, but in any one year the total expenses of the Section shall not exceed the amount allotted for this purpose in the annual budget of the Society. No officer or member of the Section shall have the authority to incur any expense in the name of the Society, except as specified above.

Article 11. Sectional Executive Committee: In intervals between annual meetings an Executive Committee, composed of the Chairperson, Secretary-TREASURER, ~~the Past Chairperson,~~ and the Chairperson-Elect, may act for the Section.

Article 12. Meetings: A business meeting of the Section shall be held at least once a year. Ordinarily this meeting shall be held concurrently with the regular annual meeting of the Ecological Society of America, but if such a concurrent meeting is not feasible, then the Executive Committee of the section shall decide when and where the meeting shall be held. Sectional meetings may be held at other times and places on call of the Chairperson or on written request by ten members of the Section. Notice shall be sent to each member of the Section sixty days in advance of any meeting. A quorum of twenty members must be present at the meetings of this Section when legislative action is to be taken.

Article 13. Publications: The annual report of the Section and its official notices shall be eligible for publication in the ESA *Bulletin of the Society*. The Section also will publish a newsletter that will be distributed to all Section members.

Article 14. Amendments: These By-Laws may be amended by a two-thirds vote of those members present at any annual meeting of the Section, provided that notice has been given to all members thirty days in advance, or by a two-thirds vote of those voting in a mail-ballot sent to all Section members BY E-MAIL.