

2019

Business Meeting Report (Secretary's and Treasurer's Report)

Academy Editors

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ARKANSAS ACADEMY OF SCIENCE

103rd Annual Meeting, March 29-30, 2019

Hendrix College, Conway, AR

Frank Hardcastle
President

Stephen Addison
President-Elect

Andrew Sustich
Vice-President

R. Panneer Selvam
Past President

Collis Geren
Secretary

Mostafa Hemmati
Treasurer

Mostafa Hemmati
JAAS
Editor-in-Chief

Ivan Still
JAAS
Managing Editor

Rami Alroobi
Webmaster

Collis Geren
Historian

R. Panneer Selvam
Newsletter Editor

Stephen Addison
Undergraduate grants

Secretary's Report

MINUTES OF THE 103rd MEETING

ARKANSAS ACADEMY OF SCIENCE
SPRING 2019 BUSINESS MEETING MINUTES
March 30, 2019– 12:00 noon.
Hendrix College, Conway

The meeting was called to order at 12:00 pm. by President Frank Hardcastle.

1. President's Report

Frank welcomed all and thanked particularly Todd Tinsley and his committee, the Hendrix President, the speaker and all those who assisted with the meeting who are listed in the Academy Resolution later in these minutes for a very successful meeting. He also thanked particularly Mostafa Hemmati and the rest of the Executive Committee of the Academy.

2. Local Arrangements Committee: Todd Tinsley

Based on Online registrations as of 3/28/19, there were 272 registrants for the meeting. A total of 162 presentations, with 67 being oral and 95 posters. These broke down across the following subject areas: 87 (54% of total) Biology, with 38 orals (57% of orals) and 49 posters (52% of posters); 28 Chemistry and Physics presentations: 6 orals, 15 chemistry posters, 7 Physics posters; 24 Engineering presentations with 11 orals, 13 posters; 13 Computer Science and Math. Presentations with 5 Computer Science orals, 3 Math orals 5 Computer Science and Math posters; 10 Geosciences presentations, with 4 Geosciences orals and 6 posters.

In addition to the data provided above, Todd also thanked all those people mentioned in the Academy's Resolution contained later in these

minutes.

A motion to approve the report was made by Mostafa and the second was provided by Panneer. Approval was unanimous.

3. Secretary's Report: Collis Geren

Collis presented a review of the minutes of the executive committee meeting in January 2019 & April 2018 business meeting). Collis reminded members that minutes of the business meeting were already published in the Journal V72, but only after being reviewed twice by the executive committee. Membership for 2018 was 155 life, regular, and student members. The number of dues paying institutional members was 12.

4. Treasurer's Report: Mostafa Hemmati

Mostafa reported it was a good year for the Academy. Collis reported for the Auditing Committee (Dr. Collis Geren and Dr. Ivan Still, who verified all calculations) that all accounts balance and that the treasurer is pathologically honest (see AAS financial statement in appendix.)

The Treasurer's and Auditing committee's reports were approved unanimously.

5. Historian's Report: Collis Geren

The 2019 spring meeting of the Arkansas Academy of Science at Hendrix College in Conway, Arkansas is the 103rd annual meeting of the Academy. This will mark the fifth time that Hendrix will have hosted the Academy having done so previously in 2005, 1979, 1963 and 1939.

In 1876 Central Institute, which was to become Hendrix College, was established in Altus, Arkansas,

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by the Rev. Isham L. Burrow. Burrow was serving as a minister in the Methodist Episcopal Church, South (now a part of the United Methodist Church) at the time. The school became Central Collegiate Institute in 1881 with the addition of secondary and collegiate departments. The institute was purchased in 1884 by conferences of the Southern Methodist Church in Arkansas and was renamed Hendrix College in honor of Bishop Eugene R. Hendrix in 1889. The following year the college moved to Conway, Arkansas. By the mid-1930s Hendrix had firmly established its role as a small, coeducational, undergraduate, residential, liberal arts, church-related institution. From the mid-1950s Hendrix gradually increased student enrollment until it stabilized at just under 1,000 in the 1970s. Through the end of the 20th century, Hendrix added more than 15 buildings, developed a new master plan for growth of the campus, and revised and enhanced its curriculum and added faculty in key areas. The College's long-standing commitment to experiential education gave birth to the Hendrix Odyssey Program in 2005. This component of the curriculum, which requires three engaged learning experiences of every Hendrix graduate, is helping the College build a national reputation for leadership in engaged learning. From the foundation of more than 140 years of excellence in education, Hendrix College is moving confidently into the 21st century (from [www/hendrix.edu/College History](http://www/hendrix.edu/College%20History)).

Today Hendrix is a highly rated private, Christian college with an enrollment of 1,228 undergraduate students. Admissions is somewhat competitive as the Hendrix acceptance rate is 80%. Popular majors include Psychology, Biology, and Economics. The total number of majors offered is 32. The graduation rate is 75% (from NICHE).

6. **Journal (JAAS #72) Report:**

Editor-In-Chief Mostafa Hemmati

During the spring 2018 semester, 37 manuscripts were submitted for consideration for publication in volume 72 of the Journal of the Arkansas Academy of Science (JAAS); another manuscript which was rejected the previous year was requested to be considered for publication in the Journal this year again. Soon after receiving the manuscripts, all manuscripts were sent to reviewers and several Associate Editors. The reviewers sent all manuscripts and their comments back before the end of July 2018.

Reviewers' comments were sent to the authors between July 15, 2018, and July 30, 2018. That

process was completed by July 30, 2018. The authors were asked to respond to the reviewers' comments and return their manuscript back to Managing Editor, Dr. Still, by August 31, 2018. That allowed more than a month of time for the authors to respond to the reviewers' comments and pay for the Journal page charges. In the same letter, the authors were asked to mail a check for their page charges as well. August 31, 2018, was also the deadline for receipt of the payment of the page charges; we had to extend the deadline up to October 15 this time.

One manuscript was rejected due to major formatting problems, another was withdrawn by the author and three other manuscripts which required major corrections were rejected by the reviewers at the end. Therefore, volume 72 of the Journal includes 33 manuscripts. In the process of manuscript submission, no manuscripts were lost.

Three Associate Editors, Dr. Collis Geren, Dr. Frank Hardcastle and Dr. Rajib Choudhury helped considerably with locating possible reviewers for the manuscripts or serving as reviewer for more than one manuscript. I am grateful for all three Associate Editors' assistance. All activities relating to the handling of the manuscripts were performed electronically, and on the whole this expedited the review process. Managing editor post was performed by Dr. Ivan Still and as usual he did an excellent job. The Journal was completed by December 30, 2018. Printing of the Journal was completed by March 2, 2019. I used the Russellville Printing Company for printing of the Journal.

The Journal Editor-in-Chief's Report was approved unanimously.

Managing Editor Ivan Still

Thirty seven manuscripts were submitted for consideration of publication in volume 72 (2018) of the JAAS. Of these 26 Articles and 11 General notes were submitted by the electronic manuscript submission process on the Journal website.

By the beginning of May, manuscripts were checked for style, grammar, format, etc, to ensure compliance with the "Instructions to Authors". One paper was rejected due to issues with formatting that the authors failed to resolve in a timely fashion. Abstracts were sent to potential reviewers by mid to late May. Dr. Hemmati handled Physical Science papers, while Biological Science manuscripts were handled by Dr. Still and Dr. Barron (Ecology/Environmental papers). The majority of manuscripts were sent out electronically for review

by the beginning of June. One of the manuscripts had been rejected from the previous year and although submitted late, the original reviewers were able to process it on time.

Authors were informed if their paper was accepted with the need for minor or major revision or whether their paper was rejected in July. Authors were asked to return their revisions to their handling editor, electronically (email or Scholarworks) by August 31, with the page charges being submitted to Dr. Hemmati, Editor-in-Chief. Five manuscripts required major corrections and three manuscripts were rejected, one was withdrawn by the author. Once reviews were returned to handling editors, control of manuscript processing was returned to the Managing Editor.

The total number of manuscripts that will be published this year is 33 (down from the 36 in Volume 71), of which 23 were Articles and 10 were in General Note format. We are also publishing an In Memoriam for our departed friend and colleague, Dr. Kim Smith. Volume 72 is 236 pages long (including cover pages).

I would like to thank the reviewers and Assistant/Associate Editors and reviewers for their help in the preparation of volume 72.

Report on issues with General Data Protection Regulations (Europe).

In August 2017, our on-line manuscript handling system, bepress, was taken over by Elsevier publishing, a European company. May 25th marked the implementation of General Data Protection Regulations in Europe, an issue that was not relayed to me at the time. In an effort to be compliant with GDPR, bepress implemented policies that have now blocked my access to review email addresses to determine if they are current. While bepress have agreed to take responsibility for interrogating the database and the web for author/reviewer's current emails and determine if they are still active in the scholarship field. It is unclear if, how and/or when this will be completed. Thus, while I had hoped to be able to keep an up-to-date reviewer database that is unlikely while bepress continues to be integrated into the Elsevier family. In the meantime, I was able to recruit a student volunteer, Jackson Gray, who has worked off an excel file provided by bepress to at least provide an "off-line" expertise and current email database for us to work from. After integration, I am hoping that bepress's system will provide the benefits of Elsevier's reviewer database system.

Pursuant to recruitment of Associate Editors for biology

In the newsletter, I have pinpointed the need for two new Associate Editors for the Journal: one for Invertebrate biology and the other for Vertebrate biology. This would decrease the Managing Editor's load for the future, and might encourage a Managing Editor to come forward, who is not necessarily in the field of Biology.

I am now pleased to announce that Cristina Blanco (ATU) has volunteered her services as an Associate Editor for Vertebrate Biology.

On a professional note, I would also like to thank Dr. Hemmati for his years of service as Editor-in-Chief of the Journal, through a time of change for the publication process of the Journal and its move to the electronic handling system that we now use. Dr. Hemmati has always been supportive in these measures. On a personal note, I have enjoyed working with Mostafa, both within the Academy and also as a valued colleague and friend at Arkansas Tech. I wish him a long and happy retirement!

The Journal Managing Editor's Report was approved unanimously.

7. Webmaster: Rami Alroobi

Rami reported the web site is current and invites input on its content and structure. He reported he planned to make a Twitter site for the Academy.

A report of this meeting is now available on Twitter as the Arkansas Academy of Science.

8. Newsletter: Panneer Selvam

Panneer reminded members that the spring newsletter is what brought details of this meeting. Input from the membership is invited. Please advise Panneer if you are not receiving the newsletter.

Report was approved unanimously.

9. Committee Reports:

Nominations Committee: Mostafa Hemmati

Stephen Addison inherited the presidency of the Academy, with Andy Sustich as President-Elect and Frank Hardcastle becomes Past President.

The following nominations from the committee were reported: Todd Tinsley for Vice President; Andy Sustich for Treasurer; Abdul Bachri for Historian; Steve Addison for Undergraduate

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Research Coordinator; Ivan Still for Editor-in-Chief, JAAS.

The nominations were unanimously approved with no new nominations from the membership. The nominees were elected by acclamation.

Undergraduate Research Awards: Stephen Addison

Three awards were approved, and presented by Dr. Addison:

1. Alicen Wilcox (Harding), Determine the effect of TDP-43 on microglial polarization, Faculty Mentor David Donley.
2. Raymond J. Weldon (Henderson State), Design of polyesters and polyamides based on the imidazole structural motif, Faculty Mentor: Martin J. Campbell.
3. Blake T. Mitchell (UCA), Exploring potential differences in habitat use and body condition of darter species, *Etheostoma fragi* and *Etheostoma caeruleum*.

Outreach Committee Report- Edmund Wilson

Ed reminded the membership that the Arkansas Academy of Science has been in existence for 103 years. It is up to the membership to make sure that its existence is not a secret. We need to make sure that local newspapers report on accomplishments of the Academy and its individual members and particularly the accomplishments of students. Please contact wilson@harding.edu for further information on how you can help.

Report was approved unanimously.

10. Business Old and New:

Item 1: Upcoming meetings

Kannan reported that planning had started and he and the three other faculty who accompanied him, Kristine Garner, Amy Skypala, and David McClellan were part of the planning group who were present at the Executive Committee Meeting to learn. April 3 & 4, 2020 are the proposed dates of the meeting.

Proposed future locations for 105th meeting in 2021 include OBU and UAPB.

Item 2: Fellows Status and Vote: Collis Geren

The following proposed addition to the Academy regulations was projected for the membership to

view.

A proposal to establish Fellows and Honorary Fellows in the Arkansas Academy of Science

FELLOWS

The Fellows of the Arkansas Academy of Science are a group of distinguished scientists, technologists, engineers, and mathematicians selected in recognition of their outstanding contributions to science, technology, engineering, and mathematics (STEM) in Arkansas. Any Member of the Academy who has made a distinguished or substantial contribution to the areas of teaching, research, and service in any area of STEM in Arkansas may be nominated. AAS Fellows serve as ambassadors for the Society and as such are encouraged to engage in outreach and other activities that will benefit and promote both AAS and the STEM professions in Arkansas.

Arkansas Academy of Science members are invited to submit nominations for Fellows. A potential Fellow must be an active member of the Academy for a minimum of 3 years and have contributed to STEM in one or more of the following: (a) outstanding STEM research, (b) inspired teaching of STEM, or (c) significant leadership in the Academy. Nominations and seconds for Fellows should be submitted to the Secretary of the Academy no later than October 1 of the year previous to the year of actual consideration. A nomination consists of 1) a cover letter from the primary nominator, 2) a second supporting letter from a co-sponsor, 3) a CV of the nominee, and 4) a concise document outlining the nominee's specific contributions to STEM in Arkansas and AAS in particular. The Executive Committee will determine if the nominee's qualifications are complete during the fall Executive Committee Meeting. A majority vote of the Executive Committee on any nominee will result in that nomination being presented to the Academy Membership during the following Spring Business Meeting for possible approval. The Secretary will distribute a list of nominees to the Academy Membership at least 10 days prior to the Spring Business Meeting. Fellows will receive a plaque at the subsequent year's business meeting. Fellows are appointed for life. There are no restrictions on the number of Fellows elected each year.

HONORARY FELLOWS

The Honorary Fellows of the Arkansas Academy

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of Sciences are a group of distinguished individuals, selected in recognition of their outstanding contributions to STEM in Arkansas, who are not members of AAS. Any individual who has made a distinguished or substantial contribution in any area of STEM in Arkansas may be nominated. AAS Honorary Fellows serve as ambassadors for the Society and as such are encouraged to engage in outreach and other activities that will benefit and promote both AAS and STEM in Arkansas.

Arkansas Academy of Science members are invited to submit nominations for Honorary Fellows. Candidates must have spent a significant portion of their professional careers in Arkansas or contributed substantial research findings pertaining to Arkansas. Nominations and seconds for Honorary Fellows should be submitted to the Secretary of the Academy no later than October 1 of the year previous to the year of actual consideration. A nomination consists of 1) a cover letter from the primary nominator, 2) a second supporting letter from a co-sponsor, 3) a CV of the nominee, and 4) a concise document outlining the nominee's contribution to STEM in Arkansas. These accomplishments could be in any area of basic or applied science, engineering, math and technology as well as in STEM teaching or in service to STEM. The Executive Committee will determine if the nominee's qualifications are complete during the fall Executive Committee Meeting. A majority vote of the Executive Committee on any nominee will result in that nomination being presented to the Academy Membership during the following Spring Business Meeting for possible approval. The Secretary will distribute a list of nominees to the Academy Membership at least 10 days prior to the Spring Business Meeting. Honorary Fellows will receive a plaque at the subsequent year's business meeting. Fellows are appointed for life. There are no restrictions on the number of Honorary Fellows

Collis reported that this document has been revised more than 3 times and comes to the membership unanimously approved by the Executive Committee so it comes with an automatic move and second. The vote to approve was unanimous.

Collis then made a motion to name Doug James as the first Fellow of the Academy and Kim Smith the second. The motion was seconded and the vote for approval was unanimous.

11. Motions and Action Items:

Dr. Mostafa Hemmati requested a discretionary budget of \$8,000 for the coming year for items other than for the journal.

12. Special Award and Gift to Mostafa Hemmati

President Frank Hardcastle presented a special plaque and gift to Mostafa Hemmati. Mostafa is past president of the Academy and long time Treasurer of the Academy. Since 2008, Mostafa has been Editor-in-Chief and has worked with Dr. Still and Cedar Middleton (UARK) to move the Journal to the current electronically handled system. He will be missed!

13. Transfer of Presidency

Stephen Addison was installed as the new President of the Academy. Stephen presented Frank a plaque for his Service as President of the Academy.

The meeting was adjourned 1:15 pm by Steve Addison.

Minutes prepared by Secretary Collis Geren, April 16, 2019.

**Treasurer's Report
ARKANSAS ACADEMY OF SCIENCE
2019 FINANCIAL STATEMENT
December 7, 2019**

| | |
|-----------------------------------|----------------------------|
| Balance – December 7, 2019 | \$158,834.34 |
| Balance – December 3, 2018 | <u>\$150,132.66</u> |
| Net Gain | \$8,701.68 |

DISTRIBUTION OF FUNDS

| | |
|---|-------------|
| Checking Account Dec. 7, 2019 Arvest Bank | \$12,328.44 |
| PayPal Account: Available funds on Dec. 7, 2019 | \$87.12 |
| Certificate of Deposit Dec. 7, 2019 Includes Phoebe and George Harp Endowment Arvest Bank | \$52,786.07 |
| Certificate of Deposit Dec. 7, 2019 Arvest Bank | \$52,786.07 |

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Certificate of Deposit Dec. 7, 2019 \$40,846.64
Arvest Bank

TOTAL \$158,834.34

INCOME

1. GIFTS

a. Hendrix University \$1,000.00

Total **\$1,000.00**

2. INTEREST (Interest Earned Year to Date December 7, 2019)

a. Checking Account, Arvest Bank \$0
b. CD1 (Arvest Bank) \$1,215.03
c. CD2 (Arvest Bank) \$1,215.03
d. CD3 (Arvest Bank) \$846.34

All interest was added to the CDs **\$3,276.40**

3. JOURNAL

a. Page Charges \$7,699.99
b. Subscriptions, University of Arkansas \$150.00

Total **\$7,849.99**

4. MEMBERSHIP

a. Individual/Associate (reimbursements for double payments) \$320.98
b. Individual collected at the meeting \$2,505.00
c. Institutional \$1,100.00

Total **\$3,925.98**

5. MEETING INCOME **\$0**

6. MISCELLANEOUS INCOME

a. Unspent/returned UG awards \$129.84

Total **\$129.84**

TOTAL INCOME **\$16,182.21**

EXPENSES

1. STUDENT AWARDS **\$0**

2. AWARDS (Organizations)

a. Arkansas State Science Fair \$400
b. Arkansas Junior Academy of Science \$400
c. Arkansas Junior Science and Humanities Sym. \$400

Total **\$1,200.00**

3. UNDERGRADUATE RESEARCH AWARDS

a. Dr. Ginny Adams,, UCA \$1,000
b. Dr. Martin Campbell, Henderson State University \$1,000
c. Dr. David Donley, Harding University \$1,000

Total **\$3,000.00**

4. JOURNAL

a. Volume 72 Printing Cost \$2,681.40
b. Journal Mailing Cost \$97.95

Total **\$2,779.35**

5. MISCELLANEOUS EXPENSES

a. Reimburse Collis for Plaques \$187.68
b. Reimburse Rami for Website registration \$143.50
c. Reimburse Andy for Quicken subscription \$29.99
d. Reimburse Andy for checks/stamps \$60.01
e. Bank fees \$60.00
f. Tax report prep \$20.00

Total **\$501.18**

6. MEETING EXPENSES **\$0**

TOTAL EXPENSES **\$7,480.53**

Arkansas Academy of Science Business Meeting Report**ARKANSAS ACADEMY OF SCIENCE
COST OF JOURNAL**

| VOLUME | COPIES | PAGES | PRINTER CHARGE | TOT. VOL. COST | COST/ COPY | COST/ PAGE |
|-----------|--------|-------|-------------------|-------------------|---------------|---------------|
| 38 (1984) | 450 | 97 | \$5,562.97 | \$6,167.72 | \$13.71 | \$63.58 |
| 39 (1985) | 450 | 150 | \$7,856.20 | \$8,463.51 | \$18.81 | \$56.42 |
| 40 (1986) | 450 | 98 | \$6,175.20 | \$6,675.20 | \$14.23 | \$68.11 |
| 41 (1987) | 450 | 116 | \$7,122.79 | \$7,811.25 | \$17.36 | \$67.34 |
| 42 (1988) | 450* | 116 | \$7,210.79 | \$7,710.15 | \$17.13 | \$66.47 |
| 43 (1989) | 450* | 119 | \$8,057.24 | \$8,557.24 | \$19.02 | \$71.91 |
| 44 (1990) | 450* | 136 | \$9,298.64 | \$9,798.64 | \$21.77 | \$72.05 |
| 45 (1991) | 450* | 136 | \$9,397.07 | \$9,929.32 | \$22.06 | \$73.01 |
| 46 (1992) | 450* | 116 | \$9,478.56 | \$10,000.56 | \$22.22 | \$86.21 |
| 47 (1993) | 400 | 160 | \$12,161.26 | \$12,861.26 | \$32.15 | \$80.38 |
| 48 (1994) | 450 | 270 | \$17,562.46 | \$18,262.46 | \$40.58 | \$67.63 |
| 49 (1995) | 390 | 199 | \$14,725.40 | \$15,425.40 | \$39.55 | \$77.51 |
| 50 (1996) | 345 | 158 | \$11,950.00 | \$12,640.75 | \$36.64 | \$80.00 |
| 51 (1997) | 350 | 214 | \$14,308.01 | \$15,008.01 | \$42.88 | \$70.13 |
| 52 (1998) | 350 | 144 | \$12,490.59 | \$13,190.59 | \$37.69 | \$91.60 |
| 53 (1999) | 350 | 160 | \$13,686.39 | \$14,386.39 | \$41.10 | \$89.91 |
| 54 (2000) | 350 | 160 | \$14,149.07 | \$14,849.07 | \$42.43 | \$92.81 |
| 55 (2001) | 360 | 195 | \$16,677.22 | \$17,498.22 | \$48.61 | \$89.73 |
| 56 (2002) | 350 | 257 | \$18,201.93 | \$19,001.93 | \$54.29 | \$73.94 |
| 57 (2003) | 230 | 229 | \$14,415.12 | \$15,715.12 | \$68.33 | \$68.62 |
| 58 (2004) | 210 | 144 | \$7,875.76 | \$9,175.76 | \$43.99 | \$63.72 |
| 59 (2005) | 215 | 226 | \$16,239.04 | \$17,835.84 | \$82.96 | \$78.92 |
| 60 (2006) | 220 | 204 | \$11,348.06 | \$12,934.30 | \$58.79 | \$63.40 |
| 61 (2007) | 195 | 150 | \$8,196.84 | \$9,914.69 | \$50.84 | \$66.10 |
| 62 (2008) | 220 | 166 | \$2,865.00 | \$2,967.49 | \$13.49 | \$17.88 |
| 63 (2009) | 213 | 206 | \$3,144.08 | \$3,144.08 | \$14.76 | \$15.26 |
| 64 (2010) | 232 | 158 | \$2,713.54 | \$2,764.30 | \$11.91 | \$17.50 |
| 65 (2011) | 200 | 194 | \$2,915.12 | \$2,963.03 | \$14.82 | \$15.27 |
| 66 (2012) | 200 | 216 | \$3,087.91 | \$3,180.29 | \$15.90 | \$14.72 |
| 67 (2013) | 200 | 238 | \$3,311.42 | \$3,396.32 | \$16.98 | \$14.27 |
| 68 (2014) | 180 | 192 | \$2,812.75 | \$2,944.08 | \$16.36 | \$15.33 |
| 69 (2015) | 180 | 170 | \$2,622.87 | \$2,622.87 | \$14.57 | \$15.43 |
| 70 (2016) | 180 | 307 | \$3,179.53 | \$3,320.76 | \$18.45 | \$10.82 |
| 71 (2017) | 180 | 262 | \$2,839.45 | \$2,839.45 | \$15.77 | \$10.83 |
| 72 (2018) | 180 | 229 | \$2,681.40 | \$2,779.35 | \$15.44 | \$12.14 |

The Total Volume Cost equals the printer's charge plus the other miscellaneous charges (e.g. Mailing Costs).

- On Volume 43 the Academy received 523 copies, but the printer did not charge us for the extra 73 copies. For comparison purposes the calculated cost/copy is based on 450 copies.
- On Volume 44 the Academy received 535 copies, but the printer did not charge us for the extra 85 copies. For comparison purposes the calculated cost/copy is based on 450 copies.
- On Volume 45 the Academy received 594 copies, but the printer did not charge us for the extra 144 copies. For comparison purposes the calculated cost/copy is based on 450 copies.
- On Volume 46 the cost was greater than usual due to the high cost of a second reprinting of 54 copies by a different printer.

APPENDIX A

AWARD WINNERS FROM THE 103rd ANNIVERSARY AKANSAS ACADEMY OF SCIENCE
(awardees are underlined)

UNDERGRADUATE ORAL PRESENTATION
AWARDS: Biological and Medicinal Chemistry

1st Place

Melanin Concentrating Hormone Receptor 1 (MCH1R) Antagonists for Treating Addiction, by Britny Kirkpatrick; Jim Tarrant; Jacob Hatvany; and Thomas Pencarinha (Harding University)

UNDERGRADUATE POSTER PRESENTATION
AWARDS: General Biology

1st Place

The Antimicrobial Activity of *Callicarpa americana* Berry Extracts, by Kara Burchfield and Elizabeth Wess; and Antoinette Y. Odendaal (Southern Arkansas University)

UNDERGRADUATE POSTER PRESENTATION
AWARDS: Medicine, Molecular & Cellular Biology

1st Place

Papillary Thyroid Cancer Cells Display Differences in Drug Sensitivity that are Dependent on Extracellular Matrix Composition, by Lauren Dwyer; Brianna Kelly; Hannah Moore; and Sesalie Satterwhite (Hendrix College)

UNDERGRADUATE ORAL PRESENTATION
AWARDS: Ecology and Organismal Biology

1st Place

Biodiversity of Hymenoptera Across Sky Islands of Arkansas, by Allison Monroe¹; Oliver J. Kuhns¹; Sierra C. Hubbard¹; Reynol Rodriguez¹; Maureen R. McClung¹; Matthew D. Moran¹; and Michael W. Gates² (¹Hendrix College; ²Smithsonian National Museum of Natural History)

GRADUATE ORAL PRESENTATION AWARDS:
Ecology and Organismal Biology

1st Place

Energy Allocation Patterns in a Girdling and a Non-Girdling Caterpillar, by Brianna Trejo; and David Dussourd; Matthew Gifford. University of Central Arkansas

UNDERGRADUATE ORAL PRESENTATION
AWARDS: Geosciences

1st Place

Pointing Isn't Rude: A Proof-of-Concept HAB Stabilizer, by Russell Jeffery (University of Central Arkansas)

UNDERGRADUATE POSTER PRESENTATION
AWARDS: Geosciences

1st Place

Locating Legacy Oil and Gas Wells in Arkansas: Refining Magnetic Methods, by Michael Davis; Candy Roberts; Hunter Vickers; Jason A. Patton; Jessica Buenrostro; and Allie Roach (Arkansas Tech University)

UNDERGRADUATE POSTER PRESENTATION
AWARDS: Physics

1st Place

Quantitative Binding of Divalent Metal Ions to DNA Hairpin Loops, by Harrison Russell; Julie Gunderson; and William Gunderson (Hendrix College)

UNDERGRADUATE ORAL PRESENTATION
AWARDS: Chemistry and Physics

1st Place

Investigation Anion Interactions with Tripodal Urea-Based Anion Transporters, by Natalie Lowry (John Brown University)

UNDERGRADUATE POSTER PRESENTATION
AWARDS: Chemistry

1st Place - Tie

Microenvironment-sensitive Probes for Selective Recognition of Serum Albumin Protein in Solution, by Kallie Mendenhall; Siddhi Patel; and Rajib Choudhury (Arkansas Tech University)

Design and Optimization of a Low-Cost, Arduino-Controlled Fluorometer, by Jacob Belding; William Gunderson; and Julie Gunderson (Hendrix College)

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UNDERGRADUATE POSTER PRESENTATION

AWARDS: Engineering

1st Place

Developing Soft Actuators at SAU Engineering, by Kenneth Escudero; Daniel McKague; and Mahbub Ahmed (Southern Arkansas University)

UNDERGRADUATE ORAL PRESENTATION

AWARDS: Computer Science

1st Place

Employing Ensemble Learning for the Categorization of Android Malware Types, by Brett Baker; and Rami Alroobi (Southern Arkansas University)

GRADUATE ORAL PRESENTATION AWARDS:

Engineering

1st Place

Electromagnetic Tunability of Charged Particles in Altered Dielectric Systems, by Tamal Sarkar and Brandon A. Kemp (Arkansas State University)

UNDERGRADUATE POSTER PRESENTATION

AWARDS: Computer Science

1st Place

Scalability Studies for Compressible Flow Simulations, by John McGarigal; Alaina Edwards; and Tulin Kaman (University of Arkansas at Fayetteville)

GRADUATE ORAL PRESENTATION AWARDS:

Mathematics

1st Place

The Effects of Selection History on Perceptual and Semantic Interactions in Visual Search, by Taylor Dague; Caroline Dacus; Ken Sobel; and Amrita Puri (University of Central Arkansas)

GRADUATE ORAL PRESENTATION

AWARDS: Computer Science

1st Place

Cyber Security Awareness Training Program for University Students, by Tanim Sardar; and Luay A. Wahsheh (Arkansas Tech University)

GRADUATE POSTER PRESENTATION

AWARDS: Computer Science

1st Place

How Powerful Can Deep Learning Be Compared with Machine Learning? A Entity Resolution Case, by Xinming Li; John R. Talburt; Ting Li; and Xiangwen Liu (University of Arkansas at Little Rock)

APPENDIX B: RESOLUTIONS

**Arkansas Academy of Science
103rd Annual Meeting, 2019 Resolutions**

Be it resolved that we, the membership of the Arkansas Academy of Science (AAS), offer our sincere appreciation to Hendrix College for hosting the 103rd annual meeting of the Academy.

We thank the local arrangements committee: Susan Ablondi, Heidi Dahlmann, Bobby Engeler-Young, Joyce Hardin, Brenda Houck, Laura MacDonald, Maureen McClung, and Todd Tinsley (chair) who supported the program and meeting arrangements listed in the AAS proceedings.

We sincerely thank Hendrix College for providing its facilities and service during the meeting and the

Arkansas Academy of Computing for sponsoring oral and poster sessions. We especially thank our keynote speaker, Dr. Luis Bettencourt, for his wonderful talk.

The Academy recognizes the important role of our session chairs: Ben Cash (UCA), Rajib Choudhury (ATU), Taylor Dague (UCA), Frank Hanh (Hampton University), Courtney Hatch (Hendrix), Lionel Hewavitharana (SAU), Donghoon Kim (ASU), Maureen McClung (Hendrix), Matt Moran (Hendrix), Rajesh Sharma (ASU), Stan Trauth (ASU), and Brianna Trejo (UCA).

Even greater appreciation and sincere gratitude is

Arkansas Academy of Science Business Meeting Report

extended to our dedicated judges for the student presentations including: Stephen Addison (UCA), Abdel Bachri (SAU), Doug Barron (ATU), David Bowles (National Park Service), Andres Caro (Hendrix), Rajib Choudhury (ATU), Shannon Clardy (Henderson), Steve Cooper (Harding), Carl Frank (Arkansas Academy of Computing), Carl Frederickson (UCA), Mariusz Gajewski (ATU), Jorista Garrie (ATU), Gija Geme (SAU), Julie Gunderson (Hendrix), Franklin Hardcastle (ATU), Joyce Hardin (Hendrix), Courtney Hatch (Hendrix), Mostafa Hemmati (ATU), Lionel Hewavitharana (SAU), Md Islam (SAU), Cindy Jacobs (ATU), Kailash Jajam (UALR), Eugene Jones (Arkansas Academy of Computing), Tulin Kaman (UA), Chris Kellner (ATU), Peter Kett (Hendrix), David McClellan (UAFS), Aboozar Mosleh (ATU), Kari Naylor (UCA), Henry North (Harding), Antoinette Odendaal (SAU), Dennis Province (Harding), Andrew Schurko (Hendrix), Caitlin Scott (Hendrix), R. Panneer Selvam (UAF), Ashokkumar Sharma (UALR), Rajesh Sharma (ASU), Andrew Sustich (ASU), Todd Tinsley

(Hendrix), Susanne Wache (SACC), Scott Weston (Harding), Jessica Young (ATU), and Kaiman Zeng (ATU).

We congratulate our student researchers, scientists, and engineers who presented papers and posters whose efforts contribute directly to the future success of the Academy and the improvement of advancement of science in Arkansas.

The Academy recognizes its leadership and offers its thanks to this year's set of executive officers including Frank Hardcastle (President), Stephen Addison (President Elect), Panneer Selvam (Past President and Newsletter Editor), Andrew Sustich (Vice President), Mostafa Hemmati (Treasurer and Journal Editor-in-Chief), Ivan Still (Journal Managing Editor), Rami Alroobi (Webmaster), and Collis Geren (Secretary and Historian).

Respectfully submitted on this 30th day of March, 2019. Resolutions Committee: Frank Hardcastle (President), Andrew Sustich (Vice President), and Mostafa Hemmati (Treasurer).

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