Canadian Association of Palynologists
Association Canadienne des Palynologues

NEWSLETTER

Volume 47 Number 2 December 2024

PRESIDENT'S MESSAGE

I would like to begin by thanking the CAP Executive Committee for their continued work for the Association, and to announce my retirement as CAP's President. I took on the role of President Elect in November 2022, and President in January 2023. It has been my pleasure to represent our association during this time, and I would like to thank the CAP executive and membership for all of their support during this time. I would like to welcome Dr. Manuel Bringué as your new President of CAP. Manuel has worked for many years on the executive and brings a wealth of experience and leadership to our community in this new role. I would also like to welcome Vânia Correia to the CAP executive in the position of Newsletter Editor and Julia Hathaway to the CAP executive in the position of Website Editor. We are currently seeking nominations for the position of President Elect. This position will be a 2-year term, and an opportunity to shadow the current President, before stepping into their shoes.

CAP EXECUTIVE 2025

President: Manuel Bringué
President elect: vacant!
Past President: Jennifer Galloway
Secretary-Treasurer: Francine McCarthy
Website Editor: Julia Hathaway
Newsletter Editor: Vânia Correia
IFPS Councillor: Vera Pospelova
Outreach Oficer: Diana Tirlea

During the past year, we have updated the CAP by-laws, as discussed at previous Annual General Meetings, and voted upon at the last AGM. The updates included changing some outdated language and pronouns and formalizing the new Outreach Officer position within the Executive. Other major highlights for CAP include Rob Fensome's AASP-The Palynological Society Medal for Scientific Excellence, one of the association's highest awards. A dedication letter is included within this newsletter to commemorate this award.

Upcoming conferences and meetings that I would like the membership to be aware of are the joint International Society of Testate Amoeba Researchers (ISTAR) #11-CAP Annual General Meeting to be held June 23-27 at Brock University in St. Catharines, Ontario. The meeting, co-organized by Francine McCarthy (Brock University) and Tim Patterson (Carleton University) aims to bring together researchers studying testate amoebae as well as pollen, spores, and non-pollen palynomorphs across diverse environments, such as lakes, peatlands, soils, and saltmarshes. Thematic sessions will be aimed to strengthen connections across disciplines, including ecologists, paleoecologists, molecular ecologists, for example. Please note the abstract deadline of 15 April 2025. A testate amoebae taxonomy workshop is planned and see the Past Global Changes (PAGES) website for more information: [International seminar on Testate Amoebae | PAGES.]

ISSN 1188-3596

AASP—The Palynological Society is hosting their 57th Annual Meeting joint with The Palynological Society in Rabat, Morocco April 22-26, 2025, with an abstract deadline of March 01, 2025. The meeting will host 8 sessions, ranging from Paleozoic and Mesozoic palynology, dinoflagellate research, to applications of palynology to support the energy transition.

Looking further ahead, the XVI International Organization of Palynology / XII International Organization of Palaeobotany meeting will be held in Calgary, Alberta, in mid-August of 2028, immediately prior to the International Geological Congress. This would be an ideal time to co-host the CAP AGM. If anyone in the community has interest in contributing to the organization of this meeting, please email me at Jennifer.Galloway@nrcan-rncan.gc.ca or the conference chair Dr. Christopher West at the Royal Tyrell Museum. It will take a team to make this happen and we believe there will be great interest in coming to Calgary in 2028 for this joint event.

Lastly, I encourage all of you interested in any given position of the Executive Committee to express their interest. The position of President-Elect is currently vacant – please let us know if you are interested! As always, please do not hesitate to use our website, biannual newsletter, twitter, and now Instagram account to share content and opportunities.

It has been my absolute pleasure to serve as CAP's president, and I wish you all a peaceful holiday season.

With best wishes for the winter,

Sincerely,
Jennifer Galloway
Geological Survey of Canada

EDITOR'S NOTES

Newsletter Editor–Elect, Vânia Correia, helped compile this newsletter and provided reports on the AASP-TPS Meeting in Montpellier and the Medal For Scientific Excellence to longtime CAP member Rob Fensome She and Rob also reported on the Palyno Workshop at the GSC-Atlantic and IFPS Councillor provided a report on the Dinoflagellate Workshop in Vigo. Please send her materials for the May Newsletter that is typically lighter, without the AGM reports:
vania,correia@nrcan-rncan.gc.ca

Francine McCarthy
Interim CAP Newsletter Editor

DEADLINE FOR NEXT CAP NEWSLETTER: APRIL 30, 2025

Table of Contents

NEXT AGM: LATE JUNE IN NIAGARA

CAP will hold its AGM during the joint meeting with *The International Society of Testate Amoeba Researchers* (ISTAR) - a meeting that had been planned for the infamous COVID lockdown year of 2020. This will be a rare opportunity for CAP to take a leading role in a conference, with several well-known CAP members on the organizing committee—Florin Pendea, Martin Head, Michael Pisaric and Terri Lacourse. My co-organizer Tim Patterson and I are looking forward to an opportunity to explore synergies between these two groups of researchers where considerable overlap already exists, particularly here in Canada.

The meeting will be held **June 23-27,** 2025 at Brock University (St. Catharines, Ontario) and planned excursions include *Niagara Falls*, Geology *and Wine*, and (of course!) *Crawford Lake*.

We are calling for proposals for palynologically-themed sessions. Please contact me with ideas (**fmccarthy@brocku.ca**); for instance, I suggest that we celebrate the CAP members we lost this past year,.

Information is available (and will periodically be updated) at:
ISTA11/CAP-Niagara | Department of Earth Sciences

Other Upcoming Meetings of Interest

The 57th annual meeting of *AASP – The Palynological Society* will be held at the Scientific Institute of the University Mohammed V of Rabat, Morocco **April 22-26th 2025**.

Please find all the information here: https://palynology.org/57th-annual-meeting-aasp-the-palynological-society/

The theme for the International Geological Congress to be held immediately following the XVI International Organization of Palynology / XII International Organization of Palaeobotany meeting in Calgary, Alberta is *Geoscience for Humanity*. This theme holds plenty of scope for palynology, so put that in your calendar. We tentatively plan to hold the CAP AGM in conjunction with the IPC/IOP meeting, so put both in your calendar!

IGC 2028
CALGARY

Canadian Association of Palynologists 2024 Annual General Meeting Minutes

Held during CANQUA-CGRG 2024 (Regina, SK, Aug. 18-21) and online (Teams)

When: Monday Aug.19 at 12:15-1:15 PM (CST, 3h behind Halifax, 1h ahead of Vancouver)

Where: In person: University of Regina, Room RIC209. Online: Teams

Members in attendance at commencement: Manuel Bringué (CAP President-Elect, meeting chair), Scott Cocker, Julia Hathaway, Zhen Li, Sandy McLachlan (Recording secretary), Peta Mudie, Vera Pospelova (CAP Councillor to IFPS), Diana Tirlea, Mary Vetter. *Quorum reached.*

Joined just prior to adjournment (due to time zone mix-up in calendar invite): Alwynne Beaudoin, Simon Goring, Elizabeth Levac and Vincy Winefred.

Call to Order – 12:16 PM CST

1. Acceptance of agenda

MOTION: to accept agenda; Vera P. moves and Peta M. seconds. *Motion carried*.

2. Minutes of the 2023 Annual General Meeting

MOTION: to accept previous minutes; Peta M. moves and Diana T. seconds. *Motion carried*.

3. Business arising from previous Minutes

No business arose.

4. President(-Elect)'s report, *Manuel Bringué*

Manuel B. explained that CAP President Jennifer Galloway sends her regrets (delayed fieldwork) and remains fully engaged. Thanks were re-iterated to several individuals, in particular to CAP Secretary-Treasurer Francine M. for her continued hard work for the association this year. Main updates, as recently provided in the May Newsletter, include Julia Hathaway as newest recipient of CAP student award, and CAP's successful bid to host the next International Palynological Congress-International Organization of Palaeobotany Congress (IPC-IOPC) meeting in Calgary, tentatively set for mid-August of 2028. Vera P. noted scheduling of the congress should be optimized to make sure Canadian and international scientists and students can attend (e.g., late August would conflict with European colleagues' academic schedule). Manuel B. noted that initial discussions considered scheduling it right before the IGC 2028 (38th International Geological Congress, Canada/Calgary currently bidding to host it 12-20 Aug.) to allow travellers to attend both meetings. *Discussion only, no actions.*

5. Secretary/Treasurer's report, *Francine McCarthy*

Manuel B. noted from Francine M.'s report that current number of members in good standing is 29, but at least three people have rejoining since, and that the target membership is thirty-six to cover organization expenses. Vera P. suggested that membership email addresses should be updated (leveraging ResearchGate and other professional resources) for the individuals' latest contact information. Diana T. said she had started this updating effort, but CAP Executive needs to clarify who, between Secretary/Treasurer and new Outreach Officer, keeps track of of members' contact information.

Manuel noted that in the past, the Secretary/ Treasurer would keep track of memberships, but proposed that there should be a shared sheet (Google sheet or other) that the broader executive could access, maintain and edit. *Discussion only, no actions.*

6. Auditor's statement

An independent auditor (Dr. Kelly Biagi, Brock U.; external to CAP) was sought by Francine M. upon Terri Lacourse's recommendation. A review was conducted and everything was found to have checked out. CAP thanked Dr. Biagi.

7. Newsletter Editor's report

The position is currently vacant. Francine M. kindly put together the last newsletter.

8. Website Editor's report, *Simon Goring*

Manuel B. met with Simon G. in late January and handed over the website files to Simon G., but hasn't heard back since. Manuel B. provided a short report – the website, now free of ads, continues to work well for CAP.

MOTION: to make the Website Editor position vacant; Sandy M. moves, Zhen L. seconds. *Motion carried*.

9. CAP Councillor to IFPS' report, *Vera Pospelova*

Vera P. attended the IOPC-IPC meeting in Prague (May 27-31) where she represented CAP Councillor to IFPS (International Federation of Palynological Societies) Terri Lacourse on the first day and herself on the second day. Vera P. noted that CAP President Jennifer Galloway made a great bid, and everyone unanimously agreed to host the congress in Calgary. Martin Head was present along with Kelsey Koerner (PhD candidate, UQAR) from Canada. Jim Riding (IFPS president) discussed the option of removing all federation fees for the members. Anyone willing to write interesting pieces about lab work or research was encouraged to submit a piece to the IFPS newsletter, PALYNOS.

MOTION: to accept all reports; Zhen L. moves and Sandy M. seconds. *Motion carried*.

10. Appointment of auditor, *Francine McCarthy*

CAP is thankful to Dr. Biagi for this year's audit. Ideally, CAP will seek another auditor to spread the load and remains open for suggestions.

11. Amendments to the by-laws, *Manuel Bringué*

Manuel B. noted that the main change in the eight-page document is to Section 5, subsection 7.8 to make official the position of Outreach Officer, mainly for management of a CAP's social media presence and help boosting membership. Diana T. has been in an unofficial role of managing an Instagram account on behalf of the association for several years (with help from Nick Riddick). Manuel B. also noted changes to language in the document so that all pronouns are gender neutral, and that all timelines for resolutions have been changed from 2 months to 1 month. Any change to the by-laws requires a Special Resolution, which could be carried out at the meeting since more than 25% of membership was present and able to vote.

MOTION: to hold a vote (Special Resolution) to accept changes to the by-laws as proposed (sent to membership on May 2, 2024); Manuel B. moves and Peta M. seconds. *Motion carried* unanimously.

SPECIAL RESOLUTION: Vote to accept all proposed changes to CAP by-laws, voted in favor unanimously.

ACTION: Francine M. and Manuel B. will update the by-laws with Corporations Canada.

12. Vacancies on Executive, *Manuel Bringué*

With the position of Website Editor moved to be vacant, Julia H. put her name forward.

MOTION: to instate Julia Hathaway as Website Editor; Sandy M. moves and Mary V. seconds. *Motion carried*. Julia H.'s nomination accepted by acclamation.

Julia H. indicated her preference for a post-September start. Vânia C. (not in attendance) communicated that she would be happy to contribute as well, and her willingness to fill the position of Newsletter Editor was confirmed by email to Manuel B. earlier in the day.

MOTION: to instate Vânia Correia as Newsletter Editor; Vera P. moves and Julia H. seconds. *Motion carried*. Vânia C.'s nomination accepted by acclamation.

Welcome to the CAP Executive, Julia and Vânia!

13. The Future of CAP - Priorities and Goals

The 2028 IOPC-IPC meeting in Calgary will be a high priority for CAP in the coming years. CAP will be able to leverage a solid representation in Alberta.

Manuel B. suggested that the use of testate amoebae in freshwater systems could be showcased in the next newsletter as a means of presenting another avenue of diversity within our discipline. Peta M. indicated that she could contribute a Newsletter article on brackish water non-pollen palynomorphs (e.g., ostracods, crustaceans, parasites).

Manuel B., recalling CAP's recent recognition of Dr. Pierre Richard (at 2022 AGM in Montreal), fielded recommendations for other professionals that CAP could recognize.

Thoughts on the perennial subject of encouraging professionals and students to (re-)join CAP were shared. Manuel B. noted that CAP traditionally approached lab leaders who could in turn introduce their students to the organization. Scott C. highlighted CAP should communicate the value of participation and capture interest, particularly to students. Vera P. noted the importance of the association in fostering a sense of belonging. Julia H. proposed direct outreach to student unions, and Diana T. suggested short email notifications. Peta M. wondered if more could be done to expand membership through outreach to the francophone community.

14. Rob Fensome's AASP-The Palynological Society Medal for Scientific Excellence

Vânia Correia provided a short text summarizing Rob Fensome's AASP-TPS Medal of Scientific Excellence, the association's highest award – congratulations, Rob F.! Vânia C. will contribute a short piece to the next newsletter.

15. Other business

No other business

16. Adjournment

Meeting adjourned – 1:25 PM CST

2024 CAP AGM attendees:

From top left to bottom right: Manuel Bringué, Peta Mudie, CANQUA attendees (Mary Vetter, Scott Cocker, Diana Tirlea, Julia Hathaway), Vera Pospelova, Zhen Li and Sandy McLachlan.

The following members also joined in at the end of the meeting due to a time zone mix-up in the calendar invite: Alwynne Beaudoin, Simon Goring, Elizabeth Levac and Vincy Winefred.

Report – Secretary-Treasurer, *Francine McCarthy*

In the 8 months since our 2023 AGM held online on December 7, 2023, we have welcomed three new members: Larissa Bron (University of Victoria), Julia Hathaway (University of Toronto), and Stephen Magohe (University of Calgary). Their research interests (listed as paleoecology, biogeography, fire history; Quaternary paleoclimate and paleoecology, northern wetland carbon sequestration, climate change, isotopes; and Palynology, Sedimentology, Human Evolution, respectively) reflect the relative strength of the CAP membership in Quaternary vegetation and climate reconstruction but extending into deep time, and their institutions are distributed over a large portion of our country. Our membership is staying relatively steady, with 29 members currently in good standing and another 7 members paid through 2023 and likely to renew, but we are hoping to increase our membership as we work toward hosting the International Palynological Congress in Calgary in August 2028. I would also like to see greater engagement ahead of what will be an exciting but volunteer labour-intensive event; I cannot continue to produce newsletters twice a year AND serve as Secretary-Treasurer indefinitely!

Our financial situation is looking healthier than last year, when we incurred several important one-time expenses in addition to our annual disbursements: filing with Corporations Canada ($12.00) and the CAP Award ($500, this year to a single recipient, Julia Hathaway – congratulations Julia!). Note, however, that these routine disbursements have not yet gone through the CAP bank account over the relatively short interval since our last AGM, so I have added them as encumbrances to the financial report below to give a more accurate picture of our financial situation. Also, keep in mind that we received $132.63 in donations (the odd number resulting from the net funds received from a member after conversion from $US and paying the associated clearing fee) in addition to $120 in back dues paid by a long-time European member at the IGC in Prague. In short, despite our minimal operating costs and our relatively healthy bank balance, we are not collecting quite enough revenue from annual memberships to cover the encumbrances. We need to convince lapsed members to rejoin and, of course, recruit new members (recall that our break-even number of members in good standing is 35-36). This is particularly critical ahead of August 2028 when we will be cohosting the IPC/IOPC in Calgary with our palaeobotanical colleagues. We have committed some funds (not yet specified), but the precise investment will have to be discussed at this AGM and voted upon in upcoming years leading up to the congress.

I apologize for not being able to attend the AGM this year, which is scheduled in the middle of the night in East Asia, where I will be on August 19 ahead of the 37th International Geological Congress in Busan. I am part of the six-member delegation from Canada that will be voting on the location of the 38th IGC, and several of you are aware that Calgary is also bidding to host that in August 2028. There may be synergies to be exploited between that much larger congress and the IPC/IOPC, so hopefully we can explore these in the coming years.

Francine M.G. McCarthy

Summary of Financial Transactions Since Last AGM Report & Audit, as at mid-night August 2, 2024

Account Balance November 22, 2023
$6752.47

Revenue:

Membership dues 10* $40 (3-yr)
$400.00
Membership dues 3* $15 (1-yr)
$45.00
Membership dues (catchup/ back-dues)
$120.00
Donations
$132.63

TOTAL REVENUE
$697.63

Expenditures:

Website annual fee (WordPress)
($21.00)

TOTAL EXPENDITURES
($21.00)

NET Revenue
$676.63*

Account Balance August 2, 2024
$7429.10

*note: net revenue does not include encumbrances, not yet gone through the bank:

Encumbrances:

Corporations Canada Filing (2024 paid online evening of August 2)
($12.00)

CAP Award (cheque not yet cashed)
($500.00)

Auditor's statement

Date 8 August 2024
Re: Auditor's Report, August 2024

To the Board and Membership of the Canadian Association of Palynologists,

Thank you for the opportunity to review the financial statements of the Canadian Association of Palynologists (CAP).

For auditing purposes, Francine McCarthy (Executive, Secretary-Treasurer, CAP), provided me, Kelly Biagi (Assistant Professor, Brock University) a spreadsheet listing all transactions, as well as a facsimile of the bank statement corroborating the amounts on August 4, 2024.

Upon review of the financial documents, all appear complete, fair and transparent. The membership spreadsheet has been updated to reflect deposited funds received to date.

Revenues from membership dues and donations totaled $565 and 132.63, respectively. Expenditures were minimal ($21) and covered the cost of website fees. The net revenue is $676.63.

I consider the statements to be a fair statement of CAP's financial affairs, and I consider them to be in good order.

Sincerely,
Dr. Kelly Biagi
Assistant Professor Brock University
Kbiagi@brocku.ca

Newsletter Editor's report

[Position is vacant and there is no report this year.]

Website Editor's report, *Simon Goring*

[S. Goring did not provide a report, so M. Bringué provided a short summary below.]

CAP Website Editor's Report, August 2024

Since we haven't heard from our Website Editor (S. Goring) since February, I am providing below a short summary of CAP website activity from the last report (November 27, 2023) until Aug. 16, 2024.

The website (https://canadapaly.ca/), hosted by WordPress on a low-cost, advertisement-free plan, continues to serve as CAP's web presence. Monthly views are stable, slightly lower than the long-term (8 yr) average of 168 (Fig. 1).

So far in 2024, the website was accessed 1,031 times, with most viewers accessing the site from Canada and the United States (Fig. 2).

As expected, the most viewed page in 2024 was the Home page (308 views). The most downloaded files were *Lycopodium* batch information, Newsletter issues and Pierre Richard's *Atlas pollinique*. The website can always benefit from nice palynomorph pictures from the membership! I invite members to contact us if they wish to post palynology-related content, pictures of palynomorphs or opportunities in their labs, in Canada or abroad.

Respectfully submitted,
Manuel Bringué, for Simon Goring
CAP President-Elect and former Website Editor

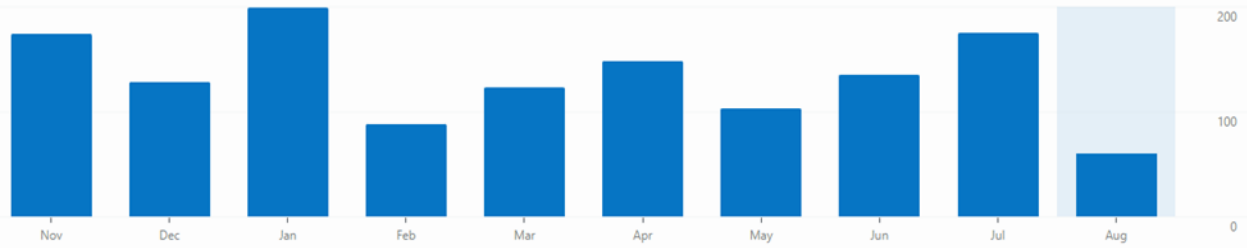

Fig. 1. Total monthly views (all pages combined) from November 1, 2023 to August 16, 2024.

Fig. 2. CAP website views per country so far in 2024 (Jan. 1 to Aug. 16).

Highlights from the Summer 2024 International Workshop on Dinoflagellate Cysts in Vigo, Spain

By the organizers of the workshop/ authors of this article:
Iria García-Moreiras, *Centro de Investigación Mariña (CIM) and Plant Biology and Soil Sciences Department, University of Vigo, Spain.* iriagamo@uvigo.gal
Vera Pospelova, *Department of Earth and Environmental Sciences, University of Minnesota, USA.* vpospe@umn.edu
Kenneth Neil Mertens, *Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER), France.* Kenneth.Mertens@ifremer.fr
Karin Zonneveld, *Zentrum für Marine Umweltwissenschaften (MARUM) and Geosciences Department, University of Bremen, Germany.* kzonneveld@marum.de

The city of Vigo, Spain, hosted an international workshop on dinoflagellate cysts from June 18 to 22, 2024. Organized by the Centre for Marine Research (CIM) at the University of Vigo, the event brought together 27 experts in marine palynology and dinoflagellate cysts to discuss the latest advancements in dinoflagellate cyst research and their applications across various scientific disciplines. Participants represented 13 countries across Europe, Asia, Africa, and North America (Fig. 1).

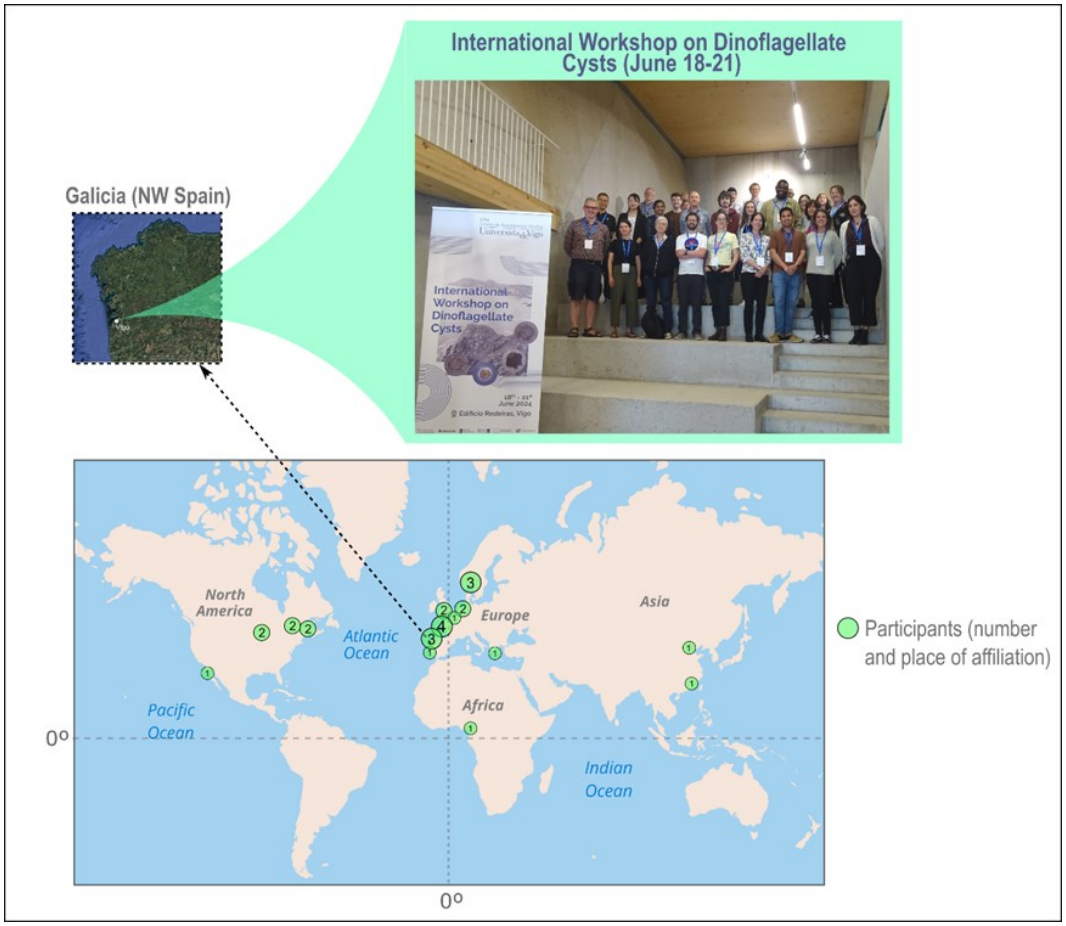

Figure 1. An infographic illustrating the event's location, a map showing the number of participants and their affiliations, and a welcome photo with all participants taken in the hall of the Redeiras Building, where the workshop sessions were held at the University of Vigo.

The Canadian Association of Palynologists was well-represented at the event, and included Dr. Audrey Limoges and Dr. Nicolas Van Nieuwenhove (University of New Brunswick), Dr. Anne de Vernal and Émilie Folie-Boivin (Université du Québec à Montréal), and Dr. Vera Pospelova and Vincy Winifred (PhD Candidate) from the University of Minnesota (USA).

Figure 2. Iria García-Moreiras, the local organizer, warmly welcomes everyone to CIM-Vigo.

The three-day event featured a wide range of presentations and panel discussions on various topics, including the taxonomy and evolution of dinoflagellate cysts, their use as proxies for paleoenvironmental and paleoclimatic reconstructions, the applications of new technologies (AI) in palynology, and the significance of studying dinoflagellate cysts in relation to harmful algal blooms and coastal management.

Additionally, the workshop's agenda also included a field trip and hands-on sessions, allowing attendees to engage in discussions, share their research findings, and explore potential collaborations.

A sampling field trip to the Ría de Vigo was organized by Dr. Iria García-Moreiras, a lecturer and researcher at the University of Vigo. She was a co-organizer and local host of the event at CIM, where she has recently initiated a new line of research in marine palynology. The Galician rías are large embayments located on the northwestern Iberian Peninsula, characterized by complex topographies and dynamic oceanographic systems that are influenced by seasonal upwelling of nutrient-rich waters from the Atlantic Ocean. This process fuels the high primary productivity and biodiversity observed in these estuarine-like environments.

Phytoplankton and sediment samples were strategically collected from an inlet and near the port inside the ría, where the muddy deposits on the seabed are likely to contain high concentrations and diversity of dinoflagellate cysts. This was later confirmed in the Botany Laboratory during the microscopy session, where the participants analyzed the samples collected during the fieldtrip. The workshop attendees also had the opportunity to examine slides containing cysts from regions around the world.

Figure 3. The workshop participants enjoy a day trip to the Cíes Islands National Park.

One session of the workshop was focused on the digitalization of microscope slides and the automation of the cyst identification processes using AI technologies. These techniques were presented as promising tools to standardize and accelerate time-consuming manual counting of individual cysts. While the digitalization of palynological slides is already a reality—as long as one has access to expensive high-resolution scanners and image processing like those used in medical diagnostics—the application of AI, and particularly machine learning, for recognizing and classifying dinoflagellate cysts is still in its early stages. During the workshop, several challenges related to the use of AI for identifying marine palynomorphs were highlighted, including the high morphological variability of some morphotypes and the need for extensive, high-quality training datasets.

Recent advances in genetics and molecular techniques were also a prominent topic of discussion, particularly regarding the identification, isolation, and analysis of dinoflagellate cysts. For instance, scientists are utilizing metabarcoding methods to identify cysts and study their biogeography, as well as employing FTIR (Fourier Transform Infrared Spectroscopy) to analyze the chemical composition of the cyst wall. Workshop discussions underscored that combining such techniques with traditional microscopy can significantly enhance our understanding of the ecology, preservation, and fossil history of dinoflagellate cysts.

A final round-table discussion allowed participants to identify key needs and future directions in dinoflagellate cyst research. There was consensus on the necessity of establishing standardized methods for cyst collection, extraction from sediments, quantification, and identification of cysts, alongside agreements on cyst taxonomy and nomenclature . Priorities included expanding global databases of modern and fossil cyst distributions, and advancing molecular techniques, such as metabarcoding. Integrating these molecular methods with traditional microscopy analyses was seen as vital for obtaining comprehensive data on cyst biodiversity and biogeography. Furthermore, an increased focus on sediment trap studies and the comparison of cyst assemblages with environmental data were identified as key for improving our understanding of the relationship between cyst production, water column characteristics, and processes of transport and preservation. Such insights are crucial for interpreting palaeoenvironmental data contained in sedimentary archives.

Figure 4. The workshop's organizing scientific committee at the closing ceremony. From left to right: Vera Pospelova, Ana Amorim, Iria García-Moreiras, Kenneth Mertens, and Karin Zonneveld.

Overview of the 56th Annual Meeting of AASP-The Palynological Society at Montpellier, France

By **Vânia Correia, Rob Fensome and Peta Mudie**
Natural Resources Canada – Geological Survey of Canada-Atlantic (GSCA), Nova Scotia B2Y 4A2, Canada

The 56th Annual Meeting of the AASP-The Palynological Society (TPS) took place from June 24th–28th, 2024 in the beautiful city of Montpellier, southern France. From the Geological Survey of Canada - Atlantic division (GSCA), and CAP members, Rob Fensome and Vânia Correia attended in-person and Peta Mudie authored a poster. About 75 palynologists from around the world, including 30 graduate students and early career scientists, attended the meeting in-person, which was hosted by the University of Montpellier, at the former Botanical Institute. The Institute includes the magnificent *Jardin des Plantes* (the oldest botanical garden in France, created in 1593 by Pierre Richer de Belleval, a young doctor, under the orders of king Henri IV, to promote health through medicinal plants). Along with the oral and poster communications, there were pre and post-conference field trips, a lunch for Early Career Researchers, a mentoring session and the business luncheon with the Society Awards ceremony.

The conference dinner was in the wonderful 17th century *Château de Flaugergues* (listed as a Historic Monument), and includes charming gardens and a vineyard producing a selection of wines — which we could taste! It was a well-organized and memorable meeting. Although smaller than many previous TPS meetings due to many related meetings around the same time in Europe, it was more intimate, with lots of good networking opportunities.

Figure 1. *Château de Flaugergues* and the vineyard (at top right); old town in Montpellier (at the bottom; photos from Rob Fensome).

Pre-conference field trip: Camargue, *June 24th*

On the first day, 12 palynologists, including Vânia, joined the pre-conference field trip to the Rhône River delta, the *Camargue*. This delta was formed mainly around 7.000 years ago by the influx of the sediments from the Rhône River, when sea-level rise slowed after the latest glaciation. The delta built up laterally through deposition from migrating tributaries and river mouths. In the morning we visited traces of ancient branches of the Rhône at the *Tour du Valat Nature Reserve*, where we had a guided tour of the *Camargue* vegetation, which is adapted to seasonal flooding by water of various salinities in marshes and ponds. The plants included *Cressa truncate, Damasonium polyspermum, Limonium sinuatum, Pulicaria sicula, Plantago* spp. and the common halophytic and eatable *Salicornia* spp., known as "green" salt. The group had a lovely vegetarian lunch at the *Tour du Valat* kitchen, before heading to the *Salin d'Aigues Mortes. Aigues-Mortes* is a fortified medieval town near the salins. The name comes from the Latin *Aquae Mortuae*, i.e., dead waters, after the stagnant salty waters that surrounded the town at its creation. We visited the impressive salt basins — sites of salt production that date back to the 4th century BCE. The company currently mining the salt was founded in 1856 as "SALINS". The saltworks are 18 km long and 13.5 km wide — an area almost the same size as that of Paris! The thousands of wetland hectares form a unique and valuable ecosystem in which flora and fauna vary with the salt density. About 200 species of plants have been listed from the *Aigues-Mortes* site, some of which are rare and protected. An interesting microalga piqued the curiosity of our group (even though not a dinoflagellate!): the alga responsible for the incredible pink colour of the saline basins is *Dunaliella salina*, a species typical of hypersaline environments. *Dunaliella salina* is eaten by the tiny shrimps, *Artemia salina*, which are eaten in turn by the flamingos (15% to 20% of the French population of flamingos lives here), giving the birds their characteristic pink feathers.

Figure 2. *Tour de Valat*: mudcrakes from a recent flood; *Salicornia,* the "green" salt; and *Limonium sinuatum*, commonly called as sea lavender (photos from Vânia Correia).

Figure 3. SALINS at *Aigues-Mortes*: view of the salt basins with a distinctive pink colour and a salt pile with the harvest from this year (photos from Vânia Correia).

Scientific Communications, *June 25th-27th*
High-quality talks and posters were presented over three days in the newly remodelled "Amphitheatre *Charles Flahaut*". The Scientific Sessions were: 1) Dinoflagellate cyst research; 2) Climate reconstructions and model simulations; 3) Human-environmental interactions and vegetation change in and out of America; 4) Vegetation dynamics beyond the Quaternary as a source of information about mountain uplift, sea-level fluctuations, plate tectonics; and 5) General palynology. In the opening of the "Dinoflagellate cyst research" session, Rob gave a detailed and enthusiastic keynote talk entitled *Dinoflagellate evolution: fossil evidence and integration with phylogenetic data*, in which Rob gave an overview of current knowledge on dinoflagellate evolution based mainly on the fossil record, and then compared the evolutionary scenario developed from this with current findings from molecular data based on modern dinoflagellates. He pointed out that the evolution-based classification developed in 1993 before molecular studies were available for dinoflagellates is broadly supported by the latter, with intriguing differences that merit further study. Rob also presented *The Application of Dual Nomenclature in Organic-walled dinoflagellate cyst*, as co-author and on behalf of Prof. Martin Head (Brock University). Dual nomenclature is a complicated and much debated aspect of especially dinoflagellate systematics that has arisen because paleontologists focus on the preserved cyst stage in the life cycle (all that is generally preserved in the fossil record), and biologists generally focus on the motile ("swimming") stage.

In the same session, Vânia presented the poster *Barremian–Aptian (Early Cretaceous) dinoflagellate cysts from the Scotian Margin, offshore eastern Canada*, showing the significant biostratigraphic and paleoenvironmental results from her ongoing post-doctoral project, and a talk on *Palynostratigraphy from the Bathonian–early Callovian (Middle Jurassic) of Cabo Mondego, Lusitanian Basin, Portugal*.

Figure 4. Photo group at *Jardin des Plantes,* University of Montpellier (Botanical Institute).

Two other significant talks for us were given by Pjotr Meyvisch and Mahwash Jamie. Pjotr, a doctoral student from the University of Ghent in Belgium, with whom Vânia, Rob, Peta and Manuel Bringué (GSC Calgary and CAP President-Elect) are collaborating, presented a talk on dinoflagellate-cyst-wall biogeochemistry; Mahwash, a post-doc from the Swedish University of Agricultural Sciences, with whom Rob is establishing a collaboration on dinoflagellate evolution, gave a talk on the latest molecular studies on dinoflagellates. Peta Mudie's latest research was presented in the "General palynology" session with a poster entitled Multiplicisphaeridium*: dinoflagellate cyst or fungal spore?* , co-authored by Andre Rochon (Université du Quebéc à Rimouski) and Pjotr Meyvisch, which was presented by the latter. The authors discussed the biological affinity of an intriguing Ordovician acritarch using new SEM and Micro-FTIR spectroscopy analyses. Initial results show the brown-coloured Pleistocene acritarch clusters closer to fungal spores than to brown dinocysts in the same Late Pleistocene sample.

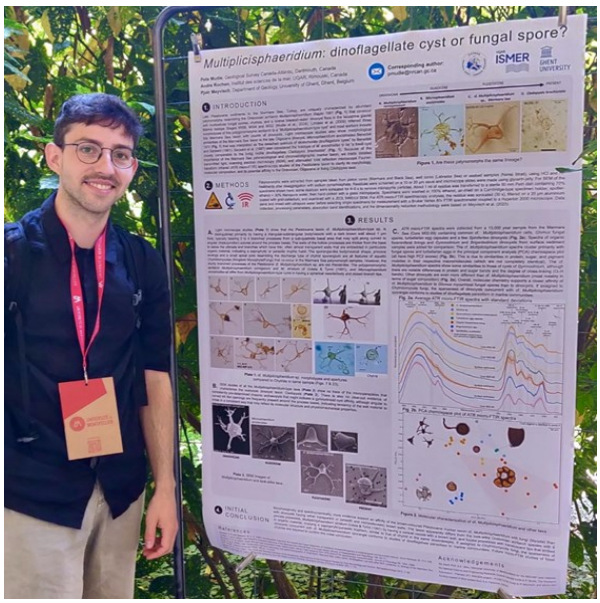

Figure 5. Pjotr Meyvisch presenting the poster from Peta Mudie et al.

Society Awards: The AASP-TPS Medal for Scientific Excellence, *June 26th*

One of the most important and symbolic moments of this meeting was the Awards Ceremony, which includes several student and professional awards. Extraordinarily, this year, two palynologists, Rob Fensome and Jim Riding, received the *AASP-TPS Medal for Scientific Excellence.* Most of you know Jim from the British Geological Survey and as Editor of the journal *Palynology*, and he has been Rob´s collaborator and friend for more than three decades. The medal is the society's highest award and has been bestowed upon individuals who have made fundamental contributions to the development of the discipline of palynology. Jim received this honoring award for **outstanding research on Mesozoic dinoflagellate cyst biostratigraphy, taxonomy and evolution, and training in palynology.** Rob received this prestigious recognition for **outstanding research on dinoflagellate cyst taxonomy, evolution, biostratigraphy and geological outreach** in his almost 40 years at GSCA!

Figure 6. Details from Jim's and Rob's award plaques (photo from Sophie Warny).

GSC "Palyno Workshop" 2024

By **Rob Fensome and Vânia Correia**
Natural Resources Canada – Geological Survey of Canada-Atlantic (GSCA), Nova Scotia

During the week of October 21-25th, Geological Survey of Canada-Atlantic (GSCA), hosted a GSC Palyno Workshop in their provisional offices at 137 Venture Run (Burnside, Dartmouth). Rob, Graham, Peta and Vânia were delighted to host GSC Calgary colleagues Manuel Bringué and Jen Galloway for this long-anticipated workshop, which emphasized palynology from the Scotian Margin. The agenda was extensive and diverse, including: focus sessions on the taxonomy of a particularly challenging but biostratigraphically useful dinocyst group, the deflandreoids, from the Mesozoic -Cenozoic; spore-pollen taxonomy of Cretaceous Scotian Margin and other assemblages; application of statistics to palynological analysis and global paleoenvironmental changes (e.g. oceanic anoxic events); dinoflagellate evolution based on integration of the fossil record with molecular phylogenetic and biochemical data; and discussion with the colleagues Fraser Keppie and Xiochun (Helen) Cen, from the Nova Scotia Department of Natural Resources and Renewables, about the potential of using TimeScale Creator© for Scotian Margin palynological and other stratigraphic events, as a database and integration tool easily available to the scientific community.

The workshop also included a hybrid special session on Quaternary research on the Thursday morning. The main goal was to gather an overview of Quaternary work involving palynology and other microfossil analyses carried out in recent years in Atlantic and Arctic Canada, and identify possible common-interests and synergies. This was an informal and warmly received meeting in which we learned about the studies and projects of Jen Galloway, Manuel Bringué, Peta Mudie, Jenny Eamer (PhD student of University of New Brunswick), Nicolas Van Nieuwenhove (University of New Brunswick, virtual); Reinhard Pienitz (Université Laval Québec, virtual); Cameron Greaves (Masters student of Dalhousie University) and Victoria Watson (PhD student of Saint Mary's University), who presented very interesting work, involving, in some cases, GSCA scientific collaborations and/or co-supervision.

We are very grateful especially to Jen and Manuel, who fitted attendance at the workshop into their busy schedules. Jen and Mauel kindly shared some of their latest scientific advances in two fascinating talks in the GSCA Science Hour, '*How the High Arctic Large Igneous Province and other events affected Arctic Climate*' and '*Oxygen availability affects natural oil degradation rates at the sediment-water interface in the Kitimat Fjord System*', respectively.

Although all the accessible and important resources for virtual networking, this workshop proved that in-person meetings are still important when involving particularly detailed work and facilitate good scientific (and social!) communication, strengthening teamwork within GSC and promoting research capacity and quality. We are grateful to all participants of the Palyno Workshop and staff involved in the logistics. In conclusion, it was a very stimulating and productive week and will hopefully not be a "one-off" event.

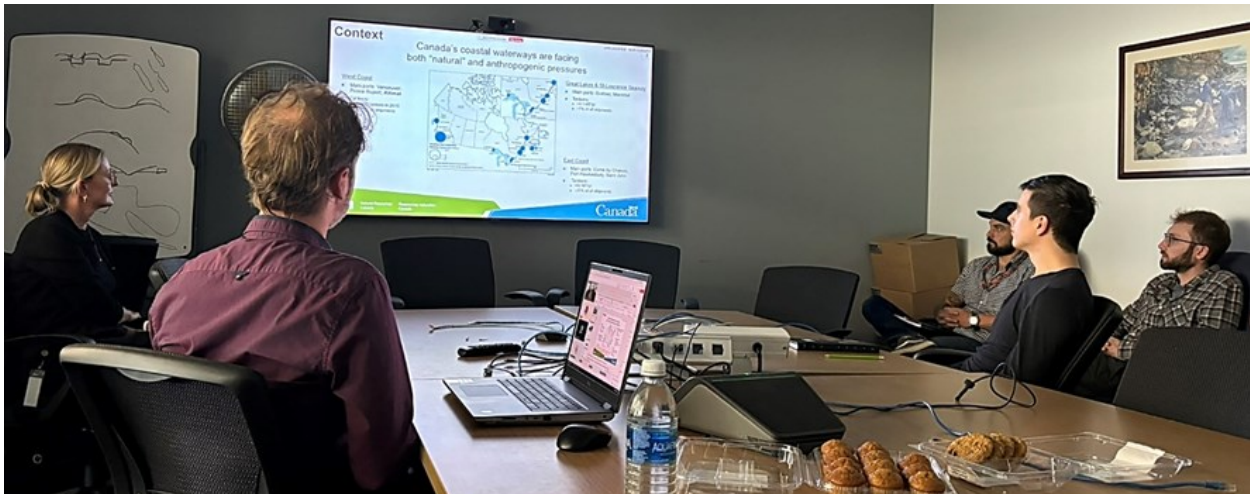

Figure 1. Jennifer Galloway and Manuel Bringué (GSC Calgary) presenting at the GSCA Science Hour on October 23rd (photos from Carla Skinner). At the bottom, "family" photo with the participants, including the virtual attendees, of the Quaternary session on October 24th (photo from Sam Young).

Awards

The AASP-TPS Medal For Scientific Excellence to Dr Robert A. Fensome

Dedication letter for Robert A. Fensome
by Julia Gravendyck and Vânia Correia, 26 June 2024, Montpellier, France

Robert A. Fensome career commenced with a B.Sc. from Nottingham University in 1973. In 1977 he graduated with a M.Sc. and in 1983 with a PhD, both under supervision of Bill Sarjeant at the University of Saskatchewan. Before officially completing his PhD, in June 1981, Rob became a Research Associate, working with Geoff Norris at the University of Toronto. In September 1984 Rob joined the GSCA to work with the legendary Graham Williams (still ongoing!). During his 40-year tenure here he has focussed on the study of Mesozoic and Cenozoic dinoflagellate cysts, particularly those from offshore eastern Canada.

Rob was a pioneer in looking at the patterns of evolution among dinoflagellates and his 1993 major publication *A classification of living and fossil dinoflagellates* remains a cornerstone in the field. Moreover, his contributions on dinoflagellates to compendia such *Palynology: principles and application* (AASP Publication, 1996) or the *Geological Time Scale* (Gradstein, 2020) are essential reading for anyone venturing into the realm of fossil dinoflagellates.

Dinocyst taxonomy is very well organized thanks to the creation and continuance of *The Lentin and Williams Index of Fossil Dinoflagellates.* This vital resource is regularly updated by Rob, in collaboration with Graham Williams and Andrew MacRae (Saint Mary´s University), in the "AASP Contributions Series" and is complemented by its digital counterpart, the DINOFLAJ database. These extensive compendia play a crucial role in the successful application of dinoflagellate cyst stratigraphy and, although not "indexed", is the most cited work in fossil dinoflagellate-literature!

Rob is adept in contributing to resolutions to difficult taxonomical problems, such as with the dinoflagellate-cyst *Wetzeliella, Sentusidinium*, *Cyclonephelium* groups. Similarly, he has become expert in the nomenclatural rules encompassed by the International Code of Nomenclature for algae, fungi and plants (the *Code*). Rob led or co-authored several proposals to change the *Code* regarding conservation of names, for example for the Cenozoic genus *Selenopemphix,* and most recently has contributed to clarifications of the Code regarding dual nomenclature.

Rob, with Graham and others, has been developing detailed stratigraphic frameworks from Atlantic and Arctic Canada, integrating mainly dinoflagellate-cyst events in a novel multidisciplinary-event approach (e.g. *The last 100 million years on the Scotian Margin, offshore eastern Canada: an event-stratigraphic scheme emphasizing biostratigraphic data*, a publication from 2008). Additionally, together with Jonathan Bujak and others, Rob has been the lead promoter and editor of the CAPE special series of papers (CAPE standing for Circum-Arctic Palynological Event Stratigraphy), for which seven papers have been published in "Atlantic Geoscience". These significant advances involve the use of TimeScale Creator in collaboration with Manuel Bringué, a powerful and dynamic tool for recording and displaying stratigraphical correlations.

Furthermore, Rob has generously given back to the scientific and broader community through his service on various committees, including as former President of the Canadian Association of Palynologists (CAP). Under the umbrella of the Atlantic Geoscience Society (AGS), he has been especially active as a member of the education, video, publications and geoheritage committees; and he has been a co-editor of the journal "Atlantic Geoscience" (formerly Atlantic Geology) journal since 2001. Included in his vast range of outreach activities , are the two awarded-winning books, *The Last Billion Years: A geological history of the Maritime Provinces of Canada* (the first edition was published in 2001 and the second in 2022) and *Four Billion Years and Counting: Canada's Geological Heritage* (published in 2014), which in both he was the coordinator (managing more than 100 authors for the latter!), co-editor, and for most chapters co-author.

Essentially, Rob's passionate dedication and superb legacy in palynological studies, with specialization in fossil dinoflagellates, has played a pivotal role in shaping contemporary palynology. And his steadfast commitment to supporting the scientific community and developing outreach activities, makes him one of the greatest "dino-stars" in palynology and an absolutely well-deserved recipient of the AASP-TPS Medal of Scientific Excellence.

Figure 1. Rob Fensome (GSCA) and Jim Riding (BGS) receiving their awards by Julia Gravendyck (University of Bonn) and Vânia Correia (GSCA), respectively, during the AASP-TPS Award ceremony at the University of Montpellier, France (photos from Sophie Warny).

Recent Publications

*denotes a CAP member

Aydin, H., Uzar, S., Cingöz, E.E., Küçüksezgin, F.,*Pospelova, V. 2024. Environmental factors influencing the abundance and spatial distribution of modern dinoflagellate cysts in Izmir Bay (Eastern Mediterranean). *Marine Pollution Bulletin*, 205: 116612, 14 p. https://doi.org/10.1016/j.marpolbul.2024.116612

Buryak, S., West, C.K., Reyes, A.V., Jensen, B.J.L., DuFrane, S.A., Davies, J.H.F.L., Luo, Y., *Galloway, J.M., Siver, P.A., Westgate, J.A., Reimink, J.R., Pearson, D.G., Wolfe, A.P. 2024. Geochronology of the Wombat (~82 Ma) and Giraffe (~48 Ma) kimberlite maar sedimentary sequences in subarctic Canada from tephra zircon U-Pb dating. *GSA Bulletin*, 136, 3921-3938. https://doi.org/10.1130/B37276.1.

Danesh, D.C., *McCarthy, F.M.G., Sangiorgi, F., *Cumming, B.F. (2024). The utility of freshwater dinoflagellate cyst assemblages as a paleoecological proxy: an assessment from northwest Ontario lakes (Canada). *Review of Palaeobotany and Palynology* Vol.326, Article 105128 https://doi.org/10.1016/j.revpalbo.2024.105128.

Diaz, J.F., Pedersen, P.K., *Galloway, J.M., *Bringué, M., Grasby, S.E. 2024. Santonian-early Maastrichtian radiolarian biostratigraphy of the northern mainland coast of Arctic Canada. *Paleogeography, Paleoclimatology, Paleoecology*, 11239. https://doi.org/10.1016/j.palaeo.2024.112398.

Diaz, J.F., Suzuki, N., *Galloway, J.M., *Bringué, M., 2024. Progress in taxonomy of Late Cretaceous high-latitude radiolarians: insights from the Horton River area, Northwest Territories, Canada. Journal *of Micropaleontology,* 43, 69-80. https://doi.org/10.5194/jm-43-69-2024.

*Galloway, J.M., Parsons, M.B., Ardakani, O.H., Falck, H., Fewster, R.E., Swindles, G.T., Sanei, H., Palmer, M.J., Nasser, N.A., Patterson, R.T. 2024. Organic matter is a predominant control on total mercury concentration in near-surface lake sediments across a boreal to low Arctic tundra transect in northern Canada. *Science of the Total Environment* 954, 176466, https://doi.org/10.1016/j.scitotenv.2024.176466

*Galloway, J.M., Hadlari, T., Dewing, K., Poulton, T., Grasby, S.E., Reinhardt, L., Rogov, M., Longman, J., Vickers, M. 2024. The silent VOICE – searching for geochemical markers to track the impact of Late Jurassic rift tectonics. *Geochemistry, Geophysics, Geosystems*, https://doi.org/10.1029/2024GC011490

Grasby, S.E., Crowley, J.L., Mohr, M.T., Percival, J.B., Ardakani, O., *Galloway, J.M., *Bringué, M., Smith, I.R., Yuan, W. 2024. OAE 3 in Arctic Canada – Arc volcanism and ocean fertilisation drive anoxia. *GSA Bulletin*). https://doi.org/10.1130/B37632.1.

Llew-Williams, B.M., *McCarthy, F.M.G., Krueger, A.M., *Riddick, N.L., MacKinnon, M.D., Lafond, K.M., Patterson, R.T., Nasser, N.A., *Head, M.J., *Pisaric, M., Turner, K., Boyce, J.I., and Brand U. (2024). Quantifying conditions required for varve formation in meromictic Crawford Lake, Ontario, Canada: important process for delimiting the Anthropocene epoch. *Journal of Paleolimnology* 71: 101–124. https://doi.org/10.1007/s10933-023-00304-w

Roza, S.E.V., Versteegh, G.J.M., *Pospelova, V., Zonneveld, K.A.F. 2024. Environmental control of interannual and seasonal variability in dinoflagellate cyst export flux over 18 years in the Cape Blanc upwelling region (Mauritania). *Frontiers in Marine Science*, 11: 1284425, 22 p. doi:

10.3389/fmars.2024.1284425

Mertens, K.N., Meyvisch, P., Gurdebeke, P.R., *Pospelova, V., Matsuoka, K., Bilien, G., Gu, H., Yamaguchi, A. 2024. Revisiting the cyst-theca relationship for *Votadinium spinosum*: an examination of the *Protoperidinium claudicans* species complex. *Palynology*, 48(3): 2303170, 24 p. https://doi.org/10.1080/01916122.2024.2303170

Meyvisch, P., Mertens, K.N., Gurdebeke, P.R., *Pospelova, V., Sandt, C., Borondics, F., Vrielinck, H., Louwye, S. 2023. Does dinocyst wall composition really reflect trophic affinity? New evidence from ATR micro-FTIR spectroscopy measurements. *Journal of Phycology*, 59:1064-1084. https://doi.org/10.1111/jpy.13382.

*Mudie, P.J., Aksu, A.E., Hiscott, R.N. 2024. Late Pleistocene–Holocene palynology and paleoceanography of Imralı Basin, Marmara Sea: Pollen-spore, dinoflagellate cyst and other NPP zonations. *Review of Palaeobotany and Palynology* 331: 105179. https://doi.org/10.1016/j.revpalbo.2024.105179

Patel, N., *McLachlan, S.M.S., *Galloway, J.M., Greenwood, D.R., *Pospelova, V. 2025. A maritime location reduced palynofloral turnover and extirpation across the end Cretaceous boundary interval on the west coast of Canada. *Cretaceous Research*, 166: 106011, 16 p. https://doi.org/10.1016/j.cretres.2024.106011

Summerhayes, C.P., Zalasiewicz, J., *Head, M., Syvitski, J, Barnosky, A., Cearreta, A., Fiałkowicz-Kozieł, B, Grinevald, J., Leinfelder, R., *McCarthy, F.M.G., McNeill, J.R., Saito, Y, Wagreich, M., Waters, C.N., Williams, M., Zinke, J. (2024). The future extent of the Anthropocene epoch: A synthesis. *Global and Planetary Change* 242 :104568. https://doi.org/10.1016/j.gloplacha.2024.104568

Williams, M., Zalasiewicz, J., Barnosky, A.D., Leinfelder, R., *Head, M.J., Waters, C.N., *McCarthy, F.M.G. et al. (2024). Palaeontological signatures of the Anthropocene are distinct from those of previous epochs. *Earth-Science Reviews* 255: 104844. https://doi.org/10.1016/j.earscirev.2024.104844

For **Membership Form** —and to keep up with all current palynological news and opportunities—see:
Canadian Association of Palynologists / Association Canadienne des Palynologues
(canadapaly.ca)