North American Commission on Stratigraphic Nomenclature, 76th Annual Meeting

Tuesday, October 5, 2021 (10:00-12:00 and 14:00-17:00 Eastern time)
Virtual meeting held in conjunction with GSA Annual Meeting in Portland, Oregon, U.S.A.

(Compiled by Janet L. Slate)

MINUTES

1. Call to Order of the 76th Annual Meeting (Commissioner Johnston)

- Refer to attachment file: 1_76th Mtg Agenda NACSN 2021_final_updated.pdf
- Welcome to the 2nd, completely online annual meeting of the NACSN
- I hope that everybody is healthy and safe after such a challenging year for many, personally and professionally
- We wanted to have this meeting in person or hybrid but there were too many uncertainties, so we decide to choose the easy and simple path of completely online, shown to be successful after record attendance last year
- We hope to accommodate both in-person and online in future meetings

Called to order at 8:08 am MDT. Mic checks preceded call to order.

2. Roll Call (Commissioner Johnston)

- 24 NACSN Commissioners and 10 Commissioners at-large

For the **American Association of Petroleum Geologists** (3)
Katherine A. Giles [2019-2022] present
Doug Sprinkel [2020-2023] present
Richard Denne [2018-2021] present

For the **Association of American State Geologists** (3)
Berry H. (Nick) Tew [2019-2022] present
David Dockery [2018-2021] present
R.M. (Matt Joeckel) [2018-2021] **Vice Chair 2021-2022** present

For the **Geological Society of America** (3)
Jon J. Smith [2020-2022] present
Gordon C. Baird [2020-2023] present
Joe Hannibal [2018-2021] absent

For the **U.S. Geological Survey** (3)
Lucy Edwards [2019-2022] present
Julie Herrick [2020-2023] absent
Nancy Stamm [2018-2021] present

For the **Geological Survey of Canada** (3)
Lynn Dafoe [2019-2022] present
Robert MacNaughton [2020-2023] present

Jim Haggart [2018-2021] present

For the **Canadian Society of Petroleum Geologists** (2)
John-Paul Zonneveld [2020-2023] present
Brian R. Pratt [2018-2021] present

For the **Geological Association of Canada** (2)
Frank Brunton [2019-2022] present
John W. Johnston [2020-2023] **Chair, 2020-2021** present

For the **SEPM Society of Sedimentary Geology** (2)
Howard Harper [2019-2022] present
Marie-Pierre Aubry [2018-2021] absent

For the **Servicio Geológico Mexicano** (1)
Rosario Isabel López-Palomino [2017-2021] absent

For the **Asociación Mexicana de Geólogos Petroleros** (1)
Hilarión Sánchez Hernández [2017-2020] absent

For the **Sociedad Geológica Mexicana** (1)
René Alejandro Téllez Flores [2020-2023] absent

For the **Instituto de Geología de la Universidad Nacional Autónoma de Mexico** (1)
Fernando Núñez Useche [2019-2022] present

Commissioners-at-large (10)
Carlton E. Brett [2017-2022] present
Mike Easton [2018-2021] present
Ismael Ferrusquía-Villafranca [2020-2022] present
Stanley C. Finney [2018-2021] absent
Richard H. Fluegeman [2016-2022] present
Ed Landing [2018-2021] absent
Norman P. Lasca [2018-2021] present
Randall C. Orndorff [2018-2021] present
Robert W. Scott [2019-2022] present
Janet L. Slate [2020-2023] **Vice Chair 2020-2021; Chair 2021-2022** present

- Quorum established. (Quorum for meetings has been set as one more than half the members of the Commission.)
- Commissioners representing organizations: 18 of 24 present
- Commissioners at-large: 8 of 10 present
- Total commissioners: 26 of 34 present (76%)

3. Approval of the Agenda (Commissioner Johnston)
- Minor edits—will get from John J
- Lucy moves to approve; Matt Joeckel seconds
- Unanimous approval

4. Introduction of New Commissioners and Guests (Commissioner Johnston)

- New Commissioners
    - None
- Guests
    - Werner Piller <werner.piller@uni-graz.at> University of Graz
        - Reporting on the ISSC
    - Andres Mauricio Valencia Quintero <Andres.Valencia@ecopetrol.com.co> Colombian Association of Petroleum Geologists and Geophysicists (ACGGP) and Colombian Society of Geology
    - Valeria Mesa <vmesa@fcien.edu.uy> Uruguayan Geological Society
    - Valeria Mesa and Andres Mauricio Valencia Quintero asked for a chance to speak to the commission at this time because they can only attend this morning and want to express their desire to join the NACSN, indicating a mutual benefit. Valeria Mesa: paleontologist/geologist; would like Uruguay to be included. Andres Mauricio Valencia Quintero: would like Colombia to be included in the NACSN.
        - We will discuss this further in Agenda Item 24

5. Approval of Minutes of the 75th Annual Meeting (Thursday, October 22, 2020) (Commissioner Johnston)

- Refer to attachment file: 5_75th Mtg Minutes NACSN 2020.pdf
- Minutes from the 75th NACSN annual meeting were distributed in draft form, collated edits and additions to create the final draft, distributed before this meeting
- No one had corrections or comments on 75th meeting minutes
- Asked for a motion to approve the minutes from the 75th NACSN annual meeting
    - Motion to approve = Norm Lasca; Seconded = Matt Joeckel
    - Unanimous approval

6. In Memoriam of Past Commissioners (Commissioner Johnston)

- Commissioner Nuñez comment about Dr. Jorge de Huelbes <huelbes@igp.minem.cu> Cuban Geological Service/Cuban Society of Geology. Fernando Nuñez spoke about Dr. Jorge de Huelbes; the Cuban Geological Service plans to appoint someone else.

7. Recognition of Awards Received by Commissioners (Commissioner Johnston)

- Emailed on Sept. 27th to all commissioners from Ismael Ferrusquía-Villafranca:
    - Commissioner Ismael Ferrusquía-Villafranca was designated an Honor Member of the ***Sociedad Mexicana de Paleontología*** in recognition of his outstanding academic career, and as chief promotor of founding this Academic Forum to share the efforts and results of the Mexican Paleontologic Community.
    - The ***Sociedad Geológica*** **Mexicana** named Ismael Ferrusquía-Villafranca Distinguished Member in recognition of his contributions to the Geology of Mexico.
    - The journal ***Paleontología Mexicana*** will publish in the forthcoming issue, a chapter on the academic career of Ismael Ferrusquía-Villafranca
    - The journal ***Revista Maya de Ciencias Geológicas*** published in June an abridged vita of Ismael Ferrusquía-Villafranca.
- Virtual applause ensued.

8. Chair's Report (Commissioner Johnston)
(Bullets below were sent from 2021 Chair John Johnston to 2021 Vice Chair Janet Slate.)

- Thank you to all the commissioners that helped me in my inaugural position as chair as this was the first time I have been chair in any large and prestigious organization such as this.
- I was honoured to represent the commission and forge ahead in a global pandemic.
- Major health issues with me and my family made it very challenging, but I persisted.
- Worked with Commissioner Haggart and Slate on the Minutes from the 75th NACSN annual meeting, taking an incredible long time to compile but happy that we recorded what was discussed. Had them proofread and distributed to the commission.
- Numerous pieces of correspondence via email included AGI's Diversity, Equity, and Inclusion statement, NACSN-sponsored sessions at GSA, adding chemostratigraphy to the code, the 2021 Stratigraphic Code, and potential commissioners with Latin America.
- Helped encourage and sort out sessions at GSA during a global pandemic.
- Helped circulate a draft proposal to add chemostrat to the code and solicited input.
- Dealt with the challenge of setting up the 2021 virtual meeting in a global pandemic.
- Organized meeting date and time by setting up a Doodle Poll. Decision based upon tally and presenting commissioners.
- Prepared and circulated a draft agenda and solicited input in advance of the meeting.
- Brainstormed to create an educational plan and improved link between university students and Stratigraphy classes to the NACSN.

9. Vice Chair's Report (Commissioner Slate)
- Looking forward to serving.
- Thanks, from Matt Joeckel.

10. Report on AGI Business (Commissioner Lasca)
In May, vision and change to geosciences report—ongoing for 6 years. Undergrad education needs to be transformed. By 2028, AGI estimates 30,000 geosciences positions. Download available on website. Call for nominations and medal recipients—proposed Lucy Edwards for Campbell medal—members should add letters to support nomination. Diversity and inclusion committee seeks members; contact susan.sullivan@colorado.edu for nominations. Pandemic changes: How to disseminate info going forward; sociopolitical filters—consider locale. Howard Harper spoke on SPG/AAPG merger. Randy Orndorff: AGI has a new executive director—former state geologist of Florida—John Arthur; Nick Tew echoed sentiments of good choice for AGI.

11. Report on IUGS and ICS (Commissioner Finney)
Not present—postponed
Picked up in afternoon session—it was a bad year for meetings; refunds from the IUGS are being done by bank transfer; folks have till the end of the month (Oct) to get this done; the ? stage in Japan approved; subepochs…?; subseries approved for the Miocene

12. Report on ISSC (Guest Piller)
Werner Piller: working on articles; latest Stratigraphy chapter is nearly finished; asked ? and ? to join writing (?) group; biostratigraphy—Werner asked ? to join group to set frame for chapter; ongoing but optimistic for 2023 submission; subseries and subepochs—not formalized but recently formalized for Quaternary—proposing formalization for entire column including Cenozoic; in

March, IUGS recommended inclusion as formal units…? Neogene stratigraphy subcommission voted for inclusion; journal editors need to be informed. Auxiliary boundary stratotypes are needed to fully characterize stages and other chronostratigraphic units—basal horizons usually defined; GSP(?) comes first; global boundary but regional boundaries need to be defined too; unit boundary stratotypes—working with 3 people (names?). Anthropocene is still under consideration.
Carl Brett wrote: I fully concur with Werner that auxiliary stratotypes are needed to fully characterize stages and other chronostratigraphic units.
Lucy Edwards: ISSC thinks Anthropocene is useful but does not belong as a stratigraphic unit on the chart. Quaternary geologists need to know.
Werner responded: Anthropocene is already established, but he agrees with Lucy's comments.
Carl Brett wrote [@8:52 am], but goes with Agenda item #24—future directions:

I still seem to be unable to broadcast. Not sure why. So for once I cannot add my spoken words.

I simply want to support Ed Landing's proposal for our next meeting (when I hope to be able to speak). In brief, Ed suggests the following

"I would like to introduce the idea at the 2021 meeting that the North American Code should provide a recommendation that authors and editors can cite as a basis for limiting the continued use of synonymous formal geologic units."

I completely concur with Ed that there is a problem with state-line, county-line etc. changes in lithostratigraphic unit names. Working as I do in the Cincinnati Tri-state area I realize this as an acute problem as you can imagine with Ohio, Indiana, and Kentucky all using different names for the same unit.

As with Ed, I would like to see a Remark in the Code that addresses this issue and encourages synonymization of duplicate names for the same units at political boundaries and encourages a "law of priority" that generally opts for the first used name to be used in all areas where a unit is exposed.

Ed's suggested wording follows:

Under Article 7. Name. (a new remark)

Remark (f). Limitation and abandonment of synonymous stratigraphic names.

The Code emphasizes that formally named stratigraphic units should serve a "clear purpose" (Article 5), has provided recommendations for their naming, and discourages the duplication of names by homonymy (Article 7c). By this logic, the maintenance and proliferation of synonymous stratigraphic names is discouraged. Although long a practice, the geographic restriction of formal stratigraphic units by political boundaries (i.e., state-state, state-province, and even county-county lines) is discouraged for stratigraphic units that are lithologically similar/identical, have comparable upper and lower contacts and stratigraphic architecture, and are of the same age in adjacent political areas. As an example, an upper Lower Cambrian quartz arenite in NE Laurentia has many local names: Bradore (Labrador, E Quebec, west Nfld), Cheshire (VT, MA), Poughquag (most of eastern NY), Lowerre (SE NY), Hardyston (northern PA, NJ), Anteitum and Helenmode (S. Pa). All of these names are probable synonyms, with the NY-NJ-PA "quartzite formations" brought into undoubted synonymy with the oldest named unit, the Cheshire. Scientific writers, editors, and journals must encourage synonymy and the use of one formal stratigraphic name for identical but differently named units that are only separated by a modern political

boundary. Maintenance of multiple synonyms for identical/very similar stratigraphic units only separated by modern political boundaries must be rigorously defended.

Howard Harper: Is there a summary document that outlines cap/lowercase of geologic time terms for geology editors?
Werner: No, but could be produced. He will try to manage that.
Lucy: USGS GNC fact sheet. Currently, out of date with regard to the Quaternary.
Janet Slate put the following in the chat: *Divisions of Geologic Time*, USGS Fact Sheet 2018–3054: https://pubs.usgs.gov/fs/2018/3054/fs20183054.pdf
Marie Pierre Aubry (faintly): international strat chart…(?) until conference in Graz, include chronostratigraphy—will try this afternoon
Brian Pratt: about Werner's comment that "the Anthropocene is here to stay" he wrote the Canadian Science Publishing that the Anthropocene is not an accepted chronostratigraphic term
Lucy: yesterday, suggested by (?), Anthropocene considered a geologic event rather than a chronostratigraphic term
Gordon Baird: Anthropocene in line with historical terms rather than geology

13. Report on the NACSN Archives (Commissioner Lasca)
Established 15-20 years ago; they go back to 1940; please submit any archival material; will be transposed to hardcopy; please print and send to Norm; copy Norm on all NACSN correspondence

14. Report on the NACSN Website (Commissioner Herrick)
Randy Orndorff (for Julie): working with Julie; Brian Pratt, Randy, and Julie contacted GSA about hosting our website; Randy sent content so GSA could see; Julie was going to get an update—she's not on the call today though
Brian Pratt: agrees that GSA is the right place to house our files; Jeanette Hammond was the point person at GSA

15. Report on Latin American Geoscience Societies (Commissioner Núñez)

- Refer to attachment: 15_Letter from Cuban Geological Service (IGP).pdf

Fernando Nuñez: in touch with institutions from… which countries(?); problems with nomenclature; financial support to participate; hybrid meetings enable distant members to participate; countries: Peru, Chile, Ecuador, Colombia, Argentina, Uruguay (others?)
Ismael Ferrusquia: geological services/institutions need to require their geologists to follow the code; make every effort to get the code across to countries; support from editors to require authors to follow the code
Robert Scott wrote: Expanding the North American to the American Code would be a tremendous advancement for future geoscientists. He agrees and seconds Ismail and Fernando.
Fernando Nuñez: suggests that one person for each country in Latin America is represented in the NACSN—perhaps become ACSN then (?)
Randy Orndorff: he represents (?) for the geological map of the world; in Feb/March 2022, the committee will meet and suggest (?)
Fernando Nuñez: working to translate the code into Spanish
Lucy Edwards: Spanish version is in good shape because Fernando already translated the 2005 version
Valeria Mesa wrote: I would be delighted to help with translation, Fernando
Brian Pratt: not much buy-in from Mexican petroleum company; should we try again?
Fernando Nuñez: he could try to contact them

Howard Harper: pertaining to language, do we need a Portuguese version of the code? Spanish versions may differ from country to country—does that need to be addressed?
Nancy Stamm wrote: Commissioner Nunez--may I have a copy of the Spanish translation of The Code to post on the U.S. Geological Survey geologic names lexicon website?
Brian Pratt wrote: Brazil has a detailed code in Portuguese that is based on the North American code.
Robert MacNaughton: petroleum geologists association and/or company—association vs. company is a distinction to consider for admission to the commission
Brian Pratt responded: not really?
Andres Mauricio Valencia Quintero wrote: I'm also happy to help with the Spanish translation of the code

16. Update on Formalizing Biochron in the Code (Commissioner Aubry)
Postponed to get Marie Pierre Aubry's connection worked out.
Nothing has been done—perhaps next year will have something to report.

17. Update on Inclusion of Chemostratigraphy in the Code (Commissioner Scott)

- Refer to attachment file: 17_Scott et al 2020.pdf
    - Robert W. Scott, Carlton E. Brett, Richard H. Fluegeman, and Brian R. Pratt (2020) North American Commission on Stratigraphic Nomenclature, Note 71 – Application for addition of chemostratigraphic units to the North American Stratigraphic Code: A case for formalizing chemostratigraphic units; Stratigraphy, Volume 17, No. 2, pp. 135–139 - online 09 Jun 2020. https://doi.org/10.29041/strat.17.2.135-139
- Email from Robert Scott:
    - A question was raised during the 2020 meeting posted in the minutes that guidelines and rules formalizing '*chemostratigraphy"* should also apply to *'event stratigraphy'*
    - In the Minutes: "… a lot of problems of how to formalize event stratigraphy and chemostratigraphy." The implication is that a decision on chemozones should be postponed so that event stratigraphy could be included.
- Email from Ed Landing:
    - Bob Scott's distinction of **chemostrat units** as only one type of **event stratigraphy** is spot on
- A vote to get chemostratigraphy in the code?

Robert Scott: incorporate into final doc; chemozones need clarification; defined and named in one succession; use Roman numerals to define; clarify the process with examples; informal subdivisions need to be designated; reference section needs designation; how an event relates to a chemozone; can vote remotely for these
Lucy Edwards: complicated; proposed changes are not just editorial; need to be thoroughly reviewed; as an example, if biostrat and chronostrat say body of rock, and chemostrat includes ice (for example), does ice apply to all?
Randy Orndorff wrote: I agree with Lucy. Things in new articles will need to be checked that they don't impact other parts of the code.
Robert Scott: does not need to imply that this change applies to all parts of the code
Lucy Edwards: adding ice to one part of the code but not to others is confusing; dividing into two, one part cannot take the name; undesirable but not forbidden; certain stratigraphers disagree—ought to be forbidden; chemostrat should not have its own rules; too important

to put to a vote right now; can't fairly vote on this right now

Howard Harper wrote: I agree with Lucy --- but maybe we need to just add what Lucy wants to do

Robert Scott: will fix it up, ready to distribute in a few minutes

Lucy Edwards: what was published a few years ago vs. proposed changes; side-by-side comparison—what was published in Stratigraphy vs. new version

Werner Piller: did not follow new changes; comments or concerns—still have unique geochemical properties in changed version (definition) but not really dealing with unique geochemical properties; mapability of zones in question; focus on Cretaceous; how do we deal with chemozones in Cambrian(?) Does it include only the peak or the entire excursion? Complete chemozone concept needs to be established

Howard Harper wrote: I also agree with Werner's 'uniqueness' of data that is 'high' or 'low', etc.

Robert Scott: oxygen isotope stages for Neogene, trying to establish consistently elsewhere, throughout the Phanerozoic; treat same way as different lithological units; guidelines need to be established; Ed Landing…(?) do or do not do this? Wants to get entire commission's thoughts

John Johnston: suggests a pause for break; Robert Scott to send document for action

Resumed meeting at 12:08 p.m. (Mountain time)—some were on the Teams link sent earlier; John sent a new link 10 min before the afternoon meeting

Robert Scott: reviewed changes in doc he sent during the break;

Carl Brett (from Ed Landing): use the more (?) including clathrates

Ed Landing: a unique type of chronostratigraphic unit

John-Paul Zonneveld wrote: Looks great Bob! Thanks for all of your work on this.

Howard Harper: could not unmute—cancelled out of meeting and returned later

Marie Pierre Aubry: excursions are difficult to designate beginning and end; not suitable to replace excursion with chemozone; cannot be replaced by boundaries; e.g., Paleocene/Eocene boundary documented in deep sea, but difficult to agree on top and base of excursion, that is, relative to chemozones; the excursions will not appear the same in different sections; suggests deleting section on excursions as chemozones—they are different; don't replace "excursion" with "chemozone"

Randy Orndorff wrote: I have had trouble fitting excursions, which are events into "zones". The excursions are in the literature....will they be changed to chemozones?

Ed Landing: chronostratigraphic units do not have a lower boundary; biostrat zones defined by many different/diachronous features; lowest occurrence of a taxon is diachronous

Robert Scott: what about change language to "may"?

Howard Harper: what about diagenetic factors? Biostrat vs. chronostrat

Robert Scott: Mg/Ca ratios would not be a chemostratigraphic unit

Nancy Stamm wrote: Not addressed in current proposal. Article. 33.c. Lithic characteristics of lithodemes--A unit distinguished from its neighbors only by means of chemical analysis is informal. How do these types of units relate to a chemostratigraphic unit ?

Ed Landing: concerned about use and misuse; remove/exclude diagenetic changes from the definition of a chemozone; syndepositional not sufficient; needs to be clear/explicit

Robert Scott: are you suggesting that the definition be a negative—what something is not—rather than positive? after syndepositional

Carl Brett: dangerous to exclude diagenesis because a phosphate spike, for example, may be useful

Lucy Edwards: Ed and Bob have two different concepts—one as a chemozone as a subset of chronostrat and one is not; mixing concepts—a bollide hitting somewhere is an event, where is the chemozone—rocks, signal and event are mixed; no mix and match; concepts

must be separate

Robert Scott: agrees that an event and chemozone are two different items; if not clear, needs to be reworded; talking about physical units in the rocks

Lucy Edwards: still not straightforward whether a chemozone is interpretive or not; is a chemozone a record of chemical properties or the time represented by the chemical properties? e.g., oxygen-isotope zones as stratotypes; is the Quaternary community onboard? Chemical properties in a rock type are not the same as the rock itself

Nancy Stamm wrote: I agree 100 percent with Lucy.

Stan Finney: representation of GSSP as diachronous misrepresents what's been done; only representative with a boundary and wealth of stratigraphic signals; need to be able to correlate sections; one species at lowest occurrence is an error—more is needed; correlation is an interpretive process

Jim Haggart: GSA sessions on chemostratigraphy a few years ago to solidify discussion; how much interaction has taken place with the wider geochemical community?

Robert Scott: beyond the oral and poster sessions, no other discussions; others would need to be invited; open to ideas and volunteers

Ed Landing: in response to Lucy, they have defined chemozones as physical units; so he doesn't understand her argument; in response to Stan, chemozones are not devoid of context, same as in biostrat; what does the geochemical community have to say? Are they using de facto chemozones? Rock bodies considered in a succession and are being used in the Cretaceous and parts of the Paleozoic. Nothing controversial here.

Marie Pierre Aubry: don't have to have an excursion to have an inflection point; excursion is a change and then a change back; chemozone and excursion are different

Robert Scott: stratigraphers pick different boundaries

Richard Fluegeman: at the Phoenix GSA meeting, we discussed getting input, e.g., Penrose or another such meeting, to define the topic better

Kate Giles wrote: A Penrose conference is a great idea!

Matt Joeckel: encountered time and time again

Nancy Stamm wrote: Perhaps the proposal is best suited in conjunction with geochemistry standards.

John Johnston: Bob Scott, what are you proposing to the commission at this point?

Robert Scott: a Penrose might be a good idea; someone needs to sponsor and carry this—not him; needs to find an advocate; what we've produced here appears that it will not go further

Howard Harper: proposes going through SEPM

John Johnston: anyone who volunteers to pursue this?

Richard Fluegeman: will be at GSA next week and will contact GSA about a possible Penrose

Brian Pratt: suggests making changes and putting the doc in Stratigraphy to get input from European colleagues; not ready to abandon process

Ed Landing: chemozone is defined by a particular author—definitions may vary for the boundary as to onset or middle of excursion; OAEs and Cambrian excursions are in use without a formal definition; anything currently in the code can be modified

Werner Piller: what a chemozone means is not defined; what Ed is talking about is an excursion; the excursion may not be identifiable in the rock record

Brian Pratt: can we make some revisions and vote in a few months?

Lucy Edwards: no, changes to the code must be voted on at an annual meeting; try to get input from the Quaternary community

Jim Haggart: commission could continue to work on this issue and be prepared to vote on this issue next year

Ed Landing: agrees that a better discussion needs to be held with a subcommission/subcommittee;

Ediacaran used in Australia
Matt Joeckel: motions to revise Robert Scott's document
Brian Pratt: seconds the motion
Jim Haggart: within the next 4 months as to specific changes to address
Randy Orndorff: what does a "no" vote mean on the motion?
Matt Joeckel: a "no" vote would mean tabled indefinitely
Jim Haggart: thinks the effort should be continued
Lucy Edwards: more time is needed, e.g., 4 months to review, 4 months to revise/reconcile; 4 months to reconsider
Ed Landing: we can do this in 4 months
Robert Scott: would like feedback before Thanksgiving, e.g., by the 20th of Nov
John-Paul Zonneveld wrote: I assume we are talking American Thanksgiving, not real Thanksgiving?
Robert Scott: comments from NACSN members sought by Dec 1; revisions/reconciliation will be returned to the NACSN by Jan 1
Gordon Baird: not sure "where the string begins" to speed the process along
Nick Tew: take it to a vote
Norm Lasca: need to make a motion to close the discussion first; motion carries by unanimous approval
Matt Joeckel motions; Brian Pratt seconds; unanimous approval
John Johnston will set up a Teams folder for the NACSN to comment

18. Update on Formalizing Subseries in the Code (Commissioner Aubry)

- Refer to attachment file: 18_Aubry et al 2020.pdf
  - Marie-Pierre Aubry, Richard Fluegeman, Lucy Edwards, Brian R. Pratt, and Carlton E. Brett (2020) North American Commission on Stratigraphic Nomenclature Report 14 – Revision of Articles 73, 81, 82 and Table 2 of the North American Stratigraphic Code to Formalize Subseries and Subepochs; Stratigraphy, Volume 17, No. 4, pp. 315-316 - online 11 Dec 2020. https://doi.org/10.29041/strat.17.4.315-316
- Refer to attached file: 18_Aubry et al 2021.pdf
  - Marie-Pierre Aubry, Werner E. Piller, Philip L. Gibbard, David A. T. Harper, and Stanley C. Finney (2021), Ratification of subseries/subepochs as formal rank/units in international chronostratigraphy; Episodes - online August 15, 2021. https://doi.org/10.18814/epiiugs/2021/021016

Marie Pierre Aubry: Neogene subseries/subepochs have been positively voted; Paleogene commission is not in favor of formalizing

19. 2021 version of the North American Stratigraphic Code (Commissioner Orndorff)

- Refer to attached file: 19_North American Stratigraphic Code 2021.pdf
  - North American Stratigraphic Code, North American Commission on Stratigraphic Nomenclature; Stratigraphy, Volume 18, No. 3, pp. 153-204 - online 16 Sep 2021. https://doi.org/10.29041/strat.18.3.01
- Ed Landing Email: For this reason, I would like to introduce the idea at the 2021 meeting that the North American Code should provide a recommendation that authors and editors can cite as a basis for limiting the continued use of synonymous formal geologic units. I believe that **Carlton Brett and likely Brian Pratt can further discuss this proposed Remark**:
  - **Under Article 7. Name. (a new remark)**
  - **Remark (f). Limitation and abandonment of synonymous stratigraphic names.**
  - The Code emphasizes that formally named stratigraphic units should serve a "clear purpose"

(Article 5), has provided recommendations for their naming, and discourages the duplication of names by homonymy (Article 7c). By this logic, the maintenance and proliferation of synonymous stratigraphic names is discouraged. Although long a practice, the geographic restriction of formal stratigraphic units by political boundaries (i.e., state-state, state-province, and even county-county lines) is discouraged for stratigraphic units that are lithologically similar/identical, have comparable upper and lower contacts and stratigraphic architecture, and are of the same age in adjacent political areas. As an example, an upper Lower Cambrian quartz arenite in NE Laurentia has many local names: Bradore (Labrador, E Quebec, west Nfld), Cheshire (VT, MA), Poughquag (most of eastern NY), Lowerre (SE NY), Hardyston (northern PA, NJ), Anteitum and Helenmode (S. Pa). All of these names are probable synonyms, with the NY-NJ-PA "quartzite formations" brought into undoubted synonymy with the oldest named unit, the Cheshire. Scientific writers, editors, and journals must encourage synonymy and the use of one formal stratigraphic name for identical but differently named units that are only separated by a modern political boundary. Maintenance of multiple synonyms for identical/very similar stratigraphic units only separated by modern political boundaries must be rigorously defended.

- **Carlton** said he could make comments on my proposed addition of a remark on recommendation of reduction of stratigraphic synonyms. Formal write up for 2022?

Randy Orndorff: 2021 version of the code has been published; appendices updated; thanks Lucy, Nancy, and Julie; will send next-step version to Norm
Howard Harper wrote: The Code DOI link gives an error to me.
Randy Orndorff: make sure that any changes suggested do not affect other parts of the code
Lucy Edwards: Stratigraphy wanted the code done by mid-Sept so it could be "sold" at GSA
Nick Tew wrote: Good job on this...
Doug Sprinkel: found it by copying and pasting doi

20. French Translation of the Code (Commissioner Haggart)

- Larmagnat, Stephanie (NRCAN/RNCAN) stephanie.larmagnat@canada.ca did the translation.

Jim Haggart: found the code in English and Spanish but not French; sought many people to do the translation; found someone in the Quebec City office of the GSC, Stephanie Larmagnat (ask Jim for qualifications); asked that it be released as an open-file report of the GSC (Canadian survey), which is planned; Fernando Nuñez offered to update the Spanish version; website is woefully out of date; extend a commendation to Stephanie and Fernando
Lucy Edwards: need to make sure that French edits do not change the terminology
Marie Pierre Aubry: will verify the translation
Brian Pratt: previous French version was published by the Quebec ministry; is there a French code?
Marie Pierre Aubry: yes, but hasn't seen the French code in many years
Mike Easton, Mike (NDMNRF): I can always get my colleague Manuel Duguet to look at the translation to see how it reads. He was involved in the French translation in Note 67. Michael

21. Revisions to the Code dealing with culturally insensitive names (Commissioner MacNaughton)

- Refer to attachment file: 21_Culturally Insensitive Names.pdf
- Refer to attachment file: 21_Youngson et al 1998.pdf
- Email from Robert Scott:
    - Suggest rewording of Article 7 in Item 21 "A proposal to amend the North American Stratigraphic Code to address the replacement of culturally insensitive or otherwise problematic names" as below:
    - In Article 7 ("Name"), remark a ("Appropriate geographic terms"), that the second sentence of this

remark be revised to read as follows: “Appropriate names may be selected from those shown on topographic, state, provincial, county, forest service, hydrographic, or comparable maps produced by indigenous organizations or governments, particularly those showing names approved by a national board for geographic names.”

- Rationale for edit: “Indigenous government” is a noun not an adjective among a list of adjectives modifying “maps”. But Indigenous governments are agencies that may compile and publish maps.

Robert MacNaughton: culturally insensitive names are an issue; Article 7 sets out rules for naming units but not for culturally insensitive, archaic, or offensive names; in New Zealand, an offensive name was abandoned; suggests that the NACSN sets out at the end of Remark A that such names should be avoided; Remark C…; following Article 20, suggests a name may be replaced if determined to be culturally insensitive (ask for verbiage); asks how to move forward

Lucy Edwards: publish a note in Stratigraphy proposing an amendment; wait 12 months till next meeting; recommends including all suggested changes in Article 7 to avoid renumbering the code

Randy Orndorff: Lucy, can we change the Precambrian stuff, chronostrat, CD-ROM at the same time?

Mike Easton (NDMNRF): It has already come up in Ontario with respect to some informal lithodemic units.

Lynn Dafoe: I'm happy to continue being involved with the changes with respect to culturally insensitive names.

Jim Haggart: offers to continue to be involved

John Johnston: offers to continue to be involved

22. Articles Committee Report (Commissioner MacNaughton)

- Refer to attachment file: 22_Articles Updates NACSN 2021.pdf

Robert MacNaughton: minor changes made after-the-fact; asking for approval of current doc, not a future organizational name change; motions that the report be approved

Brian Pratt: seconds motion

Motion carries by unanimous approval

Robert MacNaughton: suggests that a new committee be established to develop a procedures document—day-to-day procedures, that is. Willing to continue for another year as chair of the articles/bylaws committee

[2:28 PM] Werner Piller wrote: I have to leave now. Thanks for invitation and all the best.

Jim Haggart: offers to become chair of the Articles/bylaws committee

Howard Harper: agrees to continue

Norm Lasca: agrees to continue

Lynn Dafoe wrote: A procedures document would be helpful to those of us that are newer to the Commission.

Howard Harper: how the commission gets things done; including the duties of the chair/vice chair; how changes to the code get made

Jim Haggart: using the SEPM guide as a template

Norm Lasca: we have a list of such duties, right?

Lucy Edwards: the outgoing chair is supposed to send it to the incoming chair

[2:34 PM] Robert Scott (Guest): I need to be excused for family duties.

23. Report of the Nominating Committee and Election of Officers for 2021–2022 (Commissioner Haggart)

- ~~Refer to attached file: 23_Membership NACSN 2021.pdf~~

- Refer to attached file: 23 updated_NACSN Membership 2021 Summary.pdf
- Discussion about changing term of Chair or Vice Chair from 1 year to 2 years?
    - Amount of work and learning curve
    - Many other commissions I am familiar with work on a 2- to 4-year term

Jim Haggart: Who had been nominated? Replacements hadn't been identified; review doc; contact Jim if changes need to be made; how many at-large commissioners are needed and how long should the term be—3 yr was the consensus; a lot of work to track all this down—we need more members, e.g., a secretary
Lucy: in the past, it was the Chair's job is to find new commission officers; expand role of Vice Chair to seek commission officers
Randy Orndorff: stepped terms can get messed up; thanks due to nominating committee
Lucy Edwards: motions that nominations be closed
Brian: seconds motion
By affirmation, nominations are closed
Nancy Stamm wrote: Thank You Jim for the list !!
Carl Brett wrote: Thank you Jim!

24. Discussion on Future Directions of NACSN

Discussion on Inclusion of Central and South American Stratigraphers in NACSN (Commissioner Núñez)

- Shown interest in joining the NACSN by attending (understand the commitment?)
- If everybody recognizes the mutual advantage/benefit, formal steps are taken?
- Request a letter from the organization they are representing, understanding the commitment they are agreeing to?

Fernando Nuñez: representatives—one each from Central and South America?
Norm Lasca: Ismael Ferrusquia worked on this idea some time back; happy to see that Fernando has made progress
Lucy Edwards: could be more than one per country; articles will need to be changed
Jim Haggart: some of our Mexican representatives have been absent over the years; how to restructure the composition of the commission
Ismael Ferrusquia: proposes Pan-American Commission on Stratigraphic Nomenclature
John Johnston: action item for Fernando is to seek out interested parties
[2:56 PM] Valeria Mesa (Uruguay) (Guest) wrote: Fernando, perhaps I can give you information about the other institutions in Uruguay that are related to geology, So you can contact other people
Howard Harper: agrees that "Pan-American" is better than "American"
[2:57 PM] John-Paul Zonneveld (Guest) wrote: Agreed Howard!

Discussion of Possible Junior Stratigrapher Commissioner-at-large (Commissioner Haggart)

- Refer to attached file: 24_NACSN Young Stratigrapher Position.pdf
- Email from Robert Scott:
    - Spelling correction on document: "North American Commission on Stratigraphic Nomenclature Young Stratigrapher Position:"
    - **Who?**
    - "Each year, a deserving North American graduate student~~s~~ in a recognized Masters or PhD program studying…."

Jim Haggart: one or two positions are proposed—if two, nominated in alternate years for 2-yr terms; could provide a stipend; ideas on how to advertise

Lucy Edwards: we don't have money—where would a stipend come from?
Jim Haggart: eventually, we'll get back to meeting in person; seek funding from other organizations, e.g., $500; inform people about what the commission does
Howard Harper: change description to "student and early career" rather than "young"; stratigraphy and rules of stratigraphy
Lynn Dafoe: how would students be selected?
Carl Brett wrote: I think this is a great idea and I will be happy to nominate one or more outstanding student CB
Howard Harper: simple application form and letters of reference
Lynn Dafoe: suggests a cover letter—perhaps two-page max
Howard Harper: agrees that a cover letter expressing their interest would be valuable
Ed Landing: students or early career? Thinks both would be good—call them adjuncts
Lynn Dafoe wrote: If 'early career' applicants are being considered, you should indicate what this means... 5 years from PhD or 10 years.
Jim Haggart: thanks co-committee members…(names?)
Nick Tew wrote: I think this is an excellent concept, and we will ultimately need a communication plan for making the program widely known.

Discussion of Possible Session(s) at Conferences (Commissioner Johnston)

- 2022 Geological Society of America Meeting, 9–12 Oct. in Denver, Colorado, USA
- Ask for a volunteer, commissioner to investigate and organize this?

John Johnston: seeking ideas for Denver 2022 meeting
Nancy Stamm: consider a session focused on student and early career stratigrapy
Richard Fluegeman: next year will be 75 years since Note 1 was published
Randy Orndorff wrote: Agreed, Nick. And Nancy's suggestion of GSA session for early stratigraphers is a part of that.
John Johnston: asks for volunteer(s)
Robert MacNaughton: thinks Nancy's suggestion is good; will the student/early career positions be in place by then?
Jim Haggart: doesn't see any reason why the student/early career adjuncts could not be ready by then
Nancy Stamm: volunteers
Lucy Edwards: proposals for GSA sessions are typically due around the end of January
Carl Brett: also volunteers

Educational Video or Module(s)

- Refer to attached file: 24_ 24_Stratigraphy Courses in North America.xlsx
- NACSN - Who is involved? What do we do and why? Commission and Code.
- John create storyboard for video or module – complement website text description

John Johnston: MS Excel spreadsheet of stratigraphy courses offered in the US and Canada; asks for updates; seeking input from Mexico (asked Fernando)
Carl Brett: do you want syllabi? Or what?

Social Media

- Instagram, Facebook, Twitter, LinkedIn = choose platform
- Commission members already using social media
    - Help link together?

    - Use Teams live documents to coordinate
- Longevity (who and time period?), activity (how often?), review process (?)

John Johnson: interested in helping to connect people through social media

Carl Brett: issue of changes in names of geologic units across state lines; plethora of names
Norm Lasca: Great meeting everyone. Sorry I have to leave and will miss the last few items on the agenda.
Randy Orndorff: proposes the topic for next year because it will take longer to resolve
Ed Landing: sent text to Carl comprising a new remark to Article 7 eschewing the name changes across state lines; obscures the unity of geologic history
Lucy Edwards: suggests a GSA session on this topic
Nick Tew: Dave Sollers USGS project deals with this issue
Randy Orndorff: agrees—good USGS/AASG combo session
Nancy Stamm: state line issues is a larger issue than student/early career session
[3:33 PM] Doug Sprinkel wrote: Brett I would very much like to see the document as the Intermountain West has that problem as well.
John Johnston: combine the two sessions—reconcile
Julie Herrick wrote: I'm happy to volunteer to help with this, too.
[3:38 PM] Nick Tew wrote: I can help, as well.

25. Appointment of Nominating Committee for 2021–2022 (Commissioner Johnston)

- Lucy Edwards, Lynn Dafoe, Howard Harper

John Johnston: the above agreed to serve
[3:39 PM] Howard Harper (Guest) wrote: Sorry all, i have to leave now. Good meeting. Howard

26. Election/Renewals of Commissioners-at-large (Commissioner Johnston)

- Mike Easton [2018-2021], Ed Landing [2018-2021], Norman P. Lasca [2018-2021], Randy Orndorff [2018-2021]

John Johnston: by acclamation

27. Presentation of Scrolls (Commissioner Johnston)

- To: Richard Denne [2018-2021], David Dockery [2018-2021], Matt Joeckel [2018-2021], Joe Hannibal [2018-2021], Nancy Stamm [2018-2021], Jim Haggart [2018-2021], Brian R. Pratt [2018-2021], Marie-Pierre Aubry [2018-2021], Rosario Isabel López-Palomino [2017-2021], Mike Easton [2018-2021], Stanley C. Finney [2018-2021], Ed Landing [2018-2021], Norman P. Lasca [2018-2021], Randy Orndorff [2018-2021]
- Continuing: Richard Denne [2018-2021], David Dockery [2018-2021], Matt Joeckel [2018-2021], Joe Hannibal [2018-2021], Nancy Stamm [2018-2021], Jim Haggart [2018-2021], Brian R. Pratt [2018-2021], Marie-Pierre Aubry [2018-2021], Rosario Isabel López-Palomino [2017-2021], Mike Easton [2018-2021], Ed Landing [2018-2021], Norman P. Lasca [2018-2021], Randy Orndorff [2018-2021]
- Thank Stanley C. Finney [2018-2021] for his service!

John Johnston: congratulates all

28. Adjournment of the 76th Annual Meeting (Commissioner Johnston)

- Before I adjourn the meeting, I'd like to thank all the Commissioners that worked so hard for the Commission during the last year. Especially during a global pandemic. And for your

support, as I navigated through a very difficult path this past year with me and my family.

- It has been an honour, I really enjoyed serving as Chair of the NACSN. The learning curve was so steep that I really didn't catch on until recently.
- Thank you for the opportunity, it was a privilege to serve as your Chair
- Ask for a motion to adjourn the 76th NACSN annual meeting
    - Motion to approve = ?? and Seconded = ??
    - Opposed ?? and Accepted = unanimous?
- Commissioner Slate has agreed to be Chair for 2021-2022. Approval by acclamation.
- Matt Joeckel has agreed to be Vice-Chair for 2021-2022. Approval by acclamation.

[3:43 PM] Brett, Carlton (brettce) wrote: Doug Sorry not to respond. Would be happy to talk to you re shared strat problems. Carl
Lucy motioned; J-P Zonneveld seconded; motion carries by unanimous consent

29. Call to Order of the 77th Annual Meeting (Commissioner Slate)

30. Remarks by Incoming Chair (Commissioner Slate)
Directions for next year:
Inclusion of Chemostratigraphy in the Code (Commissioner Scott)

Revisions to the Code dealing with culturally insensitive names (Commissioner MacNaughton)

Articles/bylaws Committee Report (Commissioner MacNaughton)

Discussion on Future Directions of NACSN

Discussion on Inclusion of Central and South American Stratigraphers in NACSN (Commissioner Núñez)

Discussion of Possible Junior Stratigrapher Commissioner-at-large (Commissioner Haggart)

Discussion of Possible Session(s) at Conferences (Commissioner Johnston)

changes in names of geologic units across state lines

[3:44 PM] Doug Sprinkel (Guest) wrote: Nice job John on a great meeting.
[3:47 PM] Dafoe, Lynn (Guest) wrote: Awesome job, John!
(John Johnston liked)
[3:47 PM] Herrick, Julie A wrote: Great to see everyone! See you next year!