### Arctic Workshop 2021 Program Summary

All times are Mountain Time (Denver)

### THURSDAY 15 APRIL

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:00</td>
<td>Welcome &amp; introduction</td>
</tr>
<tr>
<td>9:20</td>
<td>1. Terrestrial paleoenvironments I</td>
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<tr>
<td>10:30</td>
<td>Break</td>
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<tr>
<td>10:40</td>
<td>2. Culture/Policy/Data</td>
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<tr>
<td>11:30</td>
<td>3. Keynote – Sara Sayedi</td>
</tr>
<tr>
<td>12:10</td>
<td>Optional social breakout groups</td>
</tr>
<tr>
<td>1:00</td>
<td>4. Terrestrial paleoenvironments II</td>
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<tr>
<td>2:00</td>
<td>Break</td>
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<tr>
<td>2:10</td>
<td>5. Modern environments &amp; proxies I</td>
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<td>3:10</td>
<td>End of day</td>
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### FRIDAY 16 APRIL

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:00</td>
<td>Announcements</td>
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<tr>
<td>9:10</td>
<td>6. Modern environments &amp; proxies II</td>
</tr>
<tr>
<td>10:30</td>
<td>Break</td>
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<tr>
<td>10:40</td>
<td>7. Ice sheets &amp; glaciers I</td>
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<tr>
<td>11:30</td>
<td>8. Keynote – Mark Serreze</td>
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<tr>
<td>12:10</td>
<td>Optional social breakout groups</td>
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<tr>
<td>1:00</td>
<td>9. Marine</td>
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<td>2:00</td>
<td>Break</td>
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<tr>
<td>2:10</td>
<td>10. Ice sheets &amp; glaciers II</td>
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<td>3:00</td>
<td>End of day</td>
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### SATURDAY 17 APRIL

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>9:00</td>
<td>Announcements</td>
</tr>
<tr>
<td>9:20</td>
<td>11. Ice sheets &amp; glaciers III</td>
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<tr>
<td>10:20</td>
<td>12. Keynote – Andrew Christ</td>
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<tr>
<td>10:50</td>
<td>Closing comments</td>
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<tr>
<td>11:00</td>
<td>End of science sessions</td>
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<tr>
<td>11:00</td>
<td>John T. Andrews event</td>
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<td>1:00</td>
<td>End of Andrews event</td>
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## Program Details

**9:00 AM – THURSDAY 15 APRIL 2021**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:00</td>
<td><strong>Workshop welcome &amp; introduction</strong>&lt;br&gt;Gifford Miller, Director of Arctic Workshop&lt;br&gt;Merritt Turetsky, Director of INSTAAR</td>
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### 1. Terrestrial paleoenvironments I

**Thursday am  Chair: Anne Jennings**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>09:20</td>
<td>Detection of a marine to terrestrial transition in lake sediment from Baffin Island, Arctic Canada, using sedimentary DNA</td>
<td>Power, Matthew; Crump, Sarah E; Miller, Gifford H; Bunce, Michael; Allentoft, Morten [pg 102]</td>
</tr>
<tr>
<td>09:30</td>
<td>A previously undocumented influence on H isotopes of Arctic mid-chain plant waxes through the Holocene: moss-associated methane oxidation</td>
<td>McFarlin, Jamie M; Axford, Yarrow; Kusch, Stephanie; Masterson, Andrew L; Lasher, Everett; Osburn, Magdalena R [pg 85]</td>
</tr>
<tr>
<td>09:40</td>
<td>Quantifying Holocene plant contributions to sedimentary leaf waxes in an Arctic lake setting</td>
<td>Hollister, Kayla V; Thomas, Elizabeth K; Raberg, Jonathan; Raynolds, Martha K; Gorbey, Devon B; Crump, Sarah E; Miller, Gifford H; Sepúlveda, Julio [pg 51]</td>
</tr>
<tr>
<td>09:50</td>
<td>Assessing new temperature and conductivity calibrations on a 24,000-year record of lacustrine branched glycerol dialkyl glycerol tetraethers in the Polar Ural Mountains</td>
<td>Lovell, Kathryn; Thomas, Elizabeth K; Cowling, Owen C; Castañeda, Isla S; Svendsen, John Inge [pg 82]</td>
</tr>
<tr>
<td>10:00</td>
<td>Extending brGDGT-based paleoclimate proxies to high latitudes</td>
<td>Raberg, Jonathan H; Harning, David J; Crump, Sarah E; de Wet, Greg; Blumm, Aria; Kopf, Sebastian; Geirsdóttir, Áslaug; et al. [pg 104]</td>
</tr>
<tr>
<td>10:10</td>
<td>Multi-proxy biomarker records and forward modeling of western Greenland Holocene lake temperatures and dynamics</td>
<td>Cluett, Allison A.; Thomas, Elizabeth K.; Cowling, Owen C.; Castañeda, Isla S. [pg 37]</td>
</tr>
<tr>
<td>10:20</td>
<td>Human paleo-genomics and Beringian landscapes</td>
<td>Hoffecker, John F.; Raff, Jennifer A.; O’Rourke, Dennis H.; Tackney, Justin C.; Potapova, Olga; Elias, Scott A.; Hlusko, Leslea J.; Scott, G. R. [pg 46]</td>
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<tr>
<td>10:30</td>
<td>Break</td>
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</table>
## 2. Culture/Policy/Data

**Thursday am  Chair: Julie Brigham-Grette**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
<th>Pages</th>
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</thead>
<tbody>
<tr>
<td>10:40</td>
<td>Northern knowledge for resilience, environmental sustainability and</td>
<td>King, Leslie A.; Ogilvie, Astrid E.J.; Lepore, Walter</td>
<td>61</td>
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<tr>
<td></td>
<td>adaptation in coastal communities (NORSEACC)</td>
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<td>10:50</td>
<td>The Arctic Rivers Project: A co-produced assessment of the climate</td>
<td>Musselman, Keith N.; Herman-Mercer, Nicole; Newman, Andrew J.; Koch, Joshua C.; Brooks, Cassandra; Gooseff, Michael; Cozzetto, Karen; Mutter, Edda</td>
<td>91</td>
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<tr>
<td></td>
<td>sensitivity of Alaskan &amp; Yukon rivers, fish, and Indigenous</td>
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<td>communities</td>
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<td>11:00</td>
<td>Understanding resilience and long-term environmental change in the</td>
<td>Ogilvie, Astrid E.J.; Miles, Martin; van der Wal, René; Löf, Annette</td>
<td>92</td>
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<tr>
<td></td>
<td>High Arctic: Narrative-based analyses from Svalbard (SVALUR)</td>
<td></td>
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<tr>
<td>11:10</td>
<td>Arctic Spatial Data Infrastructure: A global information highway to</td>
<td>Riopel, Simon</td>
<td>112</td>
</tr>
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<td></td>
<td>meet the challenges of a fragile Arctic ecosystem</td>
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<tr>
<td>11:20</td>
<td>Profile curated collections of data with portals on the Arctic Data</td>
<td>McLean, Erin L; Jones, Matthew B; Budden, Amber E; Walker, Lauren; Jones, Christopher S</td>
<td>86</td>
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<td>Center</td>
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### 3. Keynote - Sara Sayedi

**Thursday am**

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<tr>
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<tbody>
<tr>
<td>11:30</td>
<td>Integrating terrestrial and subsea permafrost into climate policy</td>
<td>Sayedi, Sayedeh Sara; Abbott, Benjamin W</td>
<td>115</td>
</tr>
<tr>
<td>12:00</td>
<td>Break</td>
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**Optional social breakout groups on Zoom**

**Thursday am**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Details</th>
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<tbody>
<tr>
<td>12:10</td>
<td>Choose from the 6 breakout groups by hovering over a group's number and</td>
<td>clicking the &quot;Join&quot; button that appears.</td>
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<tr>
<td></td>
<td>End breakout groups</td>
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</tbody>
</table>
1:00 PM – THURSDAY 15 APRIL 2021

4. Terrestrial paleoenvironments II
Thursday pm  Chair: Jason Briner

01:00 Patterns of postglacial vegetation establishment clarified by lacustrine sedaDNA from Baffin Island, Arctic Canada
Crump, Sarah E.; Power, Matthew; Fréchette, Bianca; de Wet, Gregory; Raynolds, Martha K.; Raberg, Jonathan H.; Allentoft, Morten; et al.  [pg 38]

01:10 Annually resolved past climate changes from South Sawtooth Lake 2900-year-long varved record
Francus, Pierre; Lapointe, François; Bradley, Raymond S.; Abbott, Mark B.  [pg 39]

01:20 Exposing the history of volcanism and sea-level changes at the Mount Edgecumbe Volcanic Field in Southeast Alaska using cosmogenic nuclides
Lesnek, Alia J; Licciardi, Joseph M.; Briner, Jason P; Baichtal, James F; Walcott, Caleb K  [pg 77]

01:30 Disentangling the evolution of Holocene climate, soil erosion and human impact in Iceland
Ardenghi, Nicolò; Harning, David J; Raberg, Jonathan; Sepúlveda, Julio; Geirsdóttir, Áslaug; Miller, Gifford H; Þórðarson, Porvaldur  [pg 23]

01:40 Coupled marine and terrestrial climate dynamics revealed by multicentury, annually resolved proxy records from Fennoscandia
Mette, Madelyn J.; Wanamaker Jr., Alan D.; Carroll, Michael L.; Ambrose, William G.; Retelle, Michael J.; Andersson, Carin  [pg 88]

01:50 The Holocene Thermal Maximum across Greenland: Reconciling differences in the timing and magnitude of peak warmth
Axford, Yarrow; de Vernal, Anne; Osterberg, Erich C.  [pg 27]

2:00 Break
2:10 PM – THURSDAY 15 APRIL 2021

5. Modern environments & proxies I
Thursday pm  Chair: Kathy Licht

02:10 Sedimentary lipid biomarkers combined with novel hyperspectral imaging techniques: A multiproxy Holocene-length sedimentary reconstruction from Lake 578, S Greenland
Schneider, Tobias; Castañeda, Isla S.; Zhao, Boyang; Salacup, Jeffrey M.; Makri, Stamatina; Bradley, Raymond S. [pg 120]

02:20 Late Holocene temperature and hydroclimate reconstruction from southern Greenland: evidence from biomarkers in lake sediments
Zhao, Boyang; Castañeda, Isla S.; Bradley, Raymond S.; Salacup, Jeff M.; Schneider, Tobias [pg 151]

02:30 An investigation of modern eastern North American Arctic lakes reveals latitudinal patterns in lake water isotope seasonality
Gorbey, Devon B; Thomas, Elizabeth K; Raynolds, Martha K; Miller, Gifford H [pg 44]

02:40 Biomarker characterization of the North Water Polynya, Baffin Bay: Implications for local sea ice and temperature proxies
Harning, David; Holman, Brooke; Woelders, Lineke; Jennings, Anne; Sepúlveda, Julio [pg 45]

02:50 Torrent or trickle?: Tracking glacial lake evolution and flood events using composite lake records
Pendleton, Simon; Donnelly, Jeffrey; Kurz, Mark D; Condro, Alan [pg 96]

03:00 Arctic seabed: New detailed mappings of compositions and physical properties
Jenkins, Chris [pg 52]

03:10 End of day
9:00 AM – FRIDAY 16 APRIL 2021

9:00   Announcements
       Gifford Miller, Director of Arctic Workshop

6. Modern environments & proxies II
   Chair: David Harning

09:10 Navigating NNA -- from planning and vulnerability to research action
       Brigham-Grette, Julie; Kumpel, Emily; Bulter, Caitlyn; Temte, James; Weston, Bessie;
       Lewis, Tracy; Paul, Paul  [pg 33]

09:20 The M’Clintock Ice Shelf: last gasp of the NW Laurentide Ice Sheet
       Furze, Mark F.A.; Pienkowski, Anna J.; Corlett, Hilary; Troyer-Riel, Robert; Thiessen, Rebecca;
       Szidat, Sönke  [pg 43]

09:30 Comparison of early twentieth century Arctic warming and contemporary
       Arctic warming in the light of daily and sub-daily data
       Przybylak, Rajmund; Wyszynski, Przemyslaw; Arazny, Andrzej  [pg 103]

09:40 Creating a database of mountain soil temperature on the subarctic Kola
       Peninsula
       Shtabrovskaya, Irina; Zenkova, Irina  [pg 124]

09:50 On the interannual variability of spring Bering Strait water temperatures
       Lenetsky, Jed E; Serreze, Mark C  [pg 76]

10:00 Investigating climatic and ecologic controls on modern plant leaf wax
       production along a latitudinal transect of Baffin Island
       Lindberg, Kurt R; Thomas, Elizabeth K; Raynolds, Martha K; Hollister, Kayla V  [pg 81]

10:10 Impact of lake basin morphometry and mixing on Arctic lake water isotope composition
       Mahar, Isabelle F; Cluett, Allison; Thomas, Elizabeth  [pg 83]

10:20 Vegetation around six lakes along a climate gradient in Baffin Island
       Raynolds, Martha K; Bültmann, Helga; Kasanke, Shawnee; Raberg, Jonathan; Miller, Gifford  [pg 106]

10:30 Break
7. Ice sheets & glaciers I  
Friday am  Chair: Giff Miller

10:40  Revisiting the Nutrient Recovery Hypothesis: can contemporary population cycles influence ecosystem function?  
Roy, Austin; McLaren, Jennie  [pg 114]

10:50  Thermokarst pond plant communities of Prudhoe Bay, Alaska: Environmental gradients and temperature feedbacks  
Watson-Cook, Emily; Walker, Donald A.; Raynolds, Martha K.; Breen, Amy L.  [pg 147]

11:00  Mapping ice flow velocity using an interactive, cloud-based feature tracking workflow  
Zheng, Whyjay; Grigsby, Shane; Sapienza, Facundo; Taylor, Jonathan; Snow, Tasha; Pérez, Fernando; Siegfried, Matthew R  [pg 153]

11:10  Quantifying layers of refrozen melt in ice cores using bubble density  
Kindstedt, Ingalise; Winski, Dominic; Kreutz, Karl; Osterberg, Erich; Campbell, Seth; Wake, Cameron; Schild, Kristin  [pg 58]

11:20  Unprecedented recent warmth in the context of the last 2000 years in Svalbard and the imminent disappearance of the west coast valley glacier Linnébreen  
Retelle, Mike; Lapointe, Francois; Bradley, Ray; Wagner, Katrin; Farnsworth, Wes  [pg 109]

8. Keynote - Mark Serreze  
Friday am

11:30  From questions of what and why to why it all matters: Evolving thoughts on the changing Arctic  
Serreze, Mark C  [pg 123]

Optional social breakout groups on Zoom  
Thursday am

12:10  Choose from the 6 breakout groups by hovering over a group's number and clicking the "Join" button that appears.

12:50  End breakout groups
9. Marine
Friday pm  Chair: Sarah Crump

01:00 **Honoring John T Andrews: The sediment fill of fjords**
Syvitski, Jaia  [pg 134]

01:10 **Changes in sediment sources in the Labrador Sea during the Late Quaternary**
Andrews, John T; Piper, David  [pg 15]

01:20 **Icebergs and tropical rainfall**
Bradley, Raymond S; Diaz, Henry F  [pg 30]

01:30 **Foraminiferal stratigraphy and lithofacies reveal the timing and environments of deglaciation and onset of Arctic/Atlantic throughflow in the Arctic Island Channels**
Kelleher, Robert V; Jennings, Anne; Brooks, Nicole; Feng, Cici; Andrews, John T; Brookins, Sarah; Woelders, Lineke; , et al  [pg 55]

01:40 **Little Ice Age triggered by intrusion of Atlantic waters into the Nordic Seas**
Lapointe, Francois; Bradley, Raymond S; Retelle, Michael  [pg 65]

01:50 **Abrupt mid-20th century onset of post Little Ice Age hydrographic instability in the Northern North Atlantic**
Lehman, Scott J; Sejrup, Hans Petter; Hjelstuen, Berit Oline; Becker, Lukas; Runarson, Rebekka Hlin; Ionita-Scholz, Monica  [pg 73]

2:00 Break
2:10 PM – FRIDAY 16 APRIL 2021

10. Ice sheets & glaciers II
   Friday pm   Chair: Mike Retelle

02:10 Cyclic patterns in Quaternary deposits on the Northwind Ridge, western Arctic Ocean: glacial vs. marine signature
   Polyak, Leonid; Dipre, Geoffrey; Wang, Rong  [pg 98]

02:20 Changes in South Greenland's peripheral glaciers since the Little Ice Age
   Larocca, Laura J; Axford, Yarrow; Bjørk, Anders A; Brooks, Jeremy P  [pg 70]

02:30 Evidence for a more extensive Greenland Ice Sheet in southwestern Greenland during the Last Glacial Maximum
   Sbarra, Christopher; Briner, Jason P.; Graham, Brandon; Thomas, Elizabeth; Poinar, Kristin; Young, Nicolás  [pg 117]
   (Briner is presenter)

02:40 Does Northeastern Cumberland Peninsula preserve a dateable pre-MIS2 moraine record – or NOT?
   Kaplan, Michael R; Miller, Gifford H; Briner, Jason P; Young, Nicolás E  [pg 54]

02:50 A revised glacial history of the Smoking Hills region, northwestern arctic Canada: evidence for late Pliocene and Quaternary continental Laurentide glaciations and the preservation of old buried glacial ice
   Smith, I. Rod; Evans, David J.A.; Gosse, John C.; Galloway, Jennifer M.  [pg 128]

03:00 End of day
9:00 AM – SATURDAY 17 APRIL 2021

9:00  Announcements
      Gifford Miller, Director of Arctic Workshop

11. Ice sheets & glaciers III
Saturday am  Chair: Ray Bradley

09:20  Evidence of palaeo-ice streaming in NE-Iceland
      Aradóttir, Nína; Benediktsson, Ívar Örn; Ingólfsson, Ólafur; Brynjólfsson, Skafti
      [pg 22]

09:30  A database for submarine glacial landforms and glacimarine sediments in the
      High-Arctic
      Streuff, Katharina T.; Ó Cofaigh, Colm  [pg 132]

09:40  The culmination of the last glaciation in the Kenai Peninsula, Alaska based on 10Be ages from Alaska’s biggest moraine boulders
      Tulenko, Joseph P.; Ash, Brendan J.; Briner, Jason P.; Reger, Richard D.  [pg 136]

09:50  The hunt for ice-free areas along the coastal Cordilleran Ice Sheet margin during the LGM continues: No dice in the northern Alexander Archipelago
      Walcott, Caleb K.; Briner, Jason P.; Baichtal, James F.  [pg 139]

10:00  The multidisciplinary story of Antarctica's history as told from blue ice moraines
      Licht, Kathy; Kaplan, Mike; Bader, Nicole; Graly, Joseph; Kassab, Christine  [pg 79]

10:10  Episodic cryosphere expansion in Arctic Canada during the Common Era reinforced by repeat dating of entombed plants and supported by climate model simulations
      Miller, Gifford; Pendleton, Simon; Lehman, Scott; Jahn, Alexandra; Zhong, Yafang; Geirsdóttir, Áslaug  [pg 89]

12. Keynote - Andrew Christ
Saturday am

10:20  Camp Century revisited: an ecosystem under the ice reveals Greenland’s warmer past
      Christ, Andrew J  [pg 35]

10:50  Closing Comments from the Arctic Workshop

11:00  End of science sessions
11:00 am - SATURDAY 17 APRIL 2021  ANDREWS EVENT

11:00am  Celebration of John T. Andrews

Subsequent time stamps are for the video recording of the event

0min  Start of video - Introduction
Giff Miller

3.5min  Science life before CU Boulder
John Andrews  [pg 19]

29min  Memories and poems for John & Martha
Slides from Pat & Mukta Webber

43min  Early days of John Andrews, Canadian roots
Video memories from John England

1hr 8min  The Andrews legacy of promoting/mentoring women
Julie Brigham-Grette

1hr 7min  John’s encounters and research around Iceland
Video memories from his Icelandic colleagues Áslaug Geirsdóttir, Gudrún Helgadóttir, Árny Sveinbjörnsdóttir, Gréta Kristjánsdóttir, Saedís Olafsdóttir, and others. Voiceover by Helgi Atlason.

1hr 16min  Open microphone comments

1hr 16min  Anne Jennings

1hr 17min  Astrid Ogilvie

1hr 19min  Scott Lehman

1hr 22.5min  Scott Elias

1hr 23.5min  Ray Bradley

1hr 28.5min  Peter Clark

1hr 35min  Áslaug Geirsdóttir & Gudrún Helgadóttir

1hr 38min  Michael Kaplan

1hr 42min  Kathy Licht & Wendy Roth

1hr 43.5min  Val Sloan

1hr 46.5min  Christoph Vogt
PM – SATURDAY 17 APRIL 2021 ANDREWS EVENT

1hr 48min  Memories of John  
Giff Miller

2hr 6min  Presentation of engraved granite tribute to John  
Chance Anderson & Giff Miller

2hr 10min  End of video

01:00pm  End of Andrews event