



# CITY OF ALLENTOWN

No: 30788

**RESOLUTION**

**R17 - 2024**

*Introduced by the Administration on February 7, 2024*

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Environmental Advisory Council (EAC) Appointment

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***Resolved by the Council of the City of Allentown, That***


City Council does hereby give advice and consent to the following reappointment to the Environmental Advisory Council (EAC).

**Tim M. O'Brien**

**Term Expiration: 01/04/2027**

	Yea	Nay
Candida Affa	X	
Ce-Ce Gerlach	X	
Daryl Hendricks	X	
Santo Napoli	X	
Natalie Santos	X	
Ed Zucal	X	
Cynthia Y. Mota, President		
TOTAL	6	0

***THIS IS TO CERTIFY, That the above copy of Resolution No. 30788 was adopted by the City Council of Allentown on the 7<sup>th</sup> day of February, 2024, and is on file in the City Clerk's Office.***

  
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 City Clerk



**MATT TUERK**  
**MAYOR**

435 Hamilton Street  
Allentown PA 18101

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**TO:** Michael Hanlon  
City Clerk

**FROM:** Matt Tuerk  
Mayor

**DATE:** January 30, 2024

**SUBJECT:** Authorities, Boards, Commissions Appointments

Mayor Tuerk has approved the following appointments for City Council's consideration.

<u>Name</u>	<u>Authority/Board/Commission</u>	<u>Term to Expire</u>
Arundhati Khanwalkar	Environmental Advisory Council	1/4/2027
Tim M. O'Brien	Environmental Advisory Council	1/4/2027

Khanwalkar (Tinku) has served previous terms and is a dedicated member of the Council. The Mayor would like Tinku to be reappointed, as her term expired in 2023. O'Brien is an Allentown resident with professional experience in the subject of environmental welfare. O'Brien will be filling a vacant position on the Council.

***Tim M. O'Brien***

timothyobrien13@gmail.com; cell – (650) 477-0968  
1473 S. Jefferson St., Allentown, PA, 18103

***Education***

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<b>PhD. Geological Science</b> , Stanford University	2013 – 2017
<b>MSc. Geoscience</b> , University of Michigan	2009 – 2012
<b>MSc. Earth and Environmental Science</b> , University of Kentucky	2007 – 2009
<b>B.S. Geology</b> , University of Dayton	2002 – 2007

***Professional Experience***

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**Researcher VII, Akima Systems Engineering** 02/13/2023 – present

- Develop models for assessing future production, consumption, and supply risks of critical minerals and other mineral commodities.
- Develop mining and processing cost models for mineral commodity production.
- Collect, organize, and analyze data pertaining to critical mineral commodity production, trade, and consumption.
- Construct economic cost models for mine project evaluations and risk assessment.
- Generate large datasets, perform statistical analyses, and develop graphics for critical mineral commodity research.
- Compose reports and manuscripts for peer-reviewed international scientific journals.

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**Research Scientist, Huntington Ingalls Industries** 04/01/2022 – 02/03/2023

- Critical Mineral and Materials Subject Matter Expert.
- Lead investigations into Critical and Strategic Materials markets for acquisition for the National Defense Stockpile.
- Develop spreadsheets and large datasets for research into critical and strategic mineral production, consumption, and trade to assess supply risks.
- Research, evaluate, and promote novel critical mineral commodity processing and extractive metallurgical technologies for SBIR/STTR funding.
- Monitor trend for nonfuel mineral commodity use in manufacturing industries and technologies.
- Lead weekly program status meeting with Defense Logistics Agency – Strategic Materials.
- Perform statistical analysis and develop graphics and visualizations for reports and quick turn-around requests.

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**Geologist and Research Analyst, Leonardo Technologies Inc.** 01/04/2021 – 03/31/2022

- Spearhead studies pertaining to sustainable critical mineral commodity supply chain development.
- Critical mineral commodity production and geology Subject Matter Expert.
- Monitor trends for critical mineral commodity consumption in auto, aerospace, renewable energy, and electronic manufacturing industries and technologies.
- Lead efforts in construction of Dept. of Energy strategic plan for mineral sustainability.
- Assist in development and drafting of Congressional Reports about critical mineral commodities.
- Generate spreadsheets and large datasets, perform statistical analyses, and develop graphics for governmental reports and peer-reviewed international scientific journals.
- Collaborate with Federal agencies, academic institutions, and mineral industry corporations for governmental studies and reports.
- Review, summarize, and present results of submissions for DOE Request for Information (RFI).

**Temporary Program Assistant, Loudoun School for Advanced Studies** 08/20/2020 – 12/31/2020

**Adjunct Professor, SUNY Cortland** 01/01/20 – 08/01/2020

- Lecturing and aiding in field and laboratory courses for Geology and Education majors.
- Providing one-on-one instruction and support during office hours.
- Design, create, and execute all aspects of geospatial database development including: online data mining, production of large datasets, generation of numerous data layers using QGIS, and deployment.
- Perform advanced computation and statistical analyses for geospatial analysis and data visualization.

**Analyst, EAG Laboratories** 05/01/19 – 12/31/20

- Collaborate with scientists/managers/clients for interdisciplinary, multi-technique approaches.
- Perform and interpret statistical data for methods development and purity control.
- Operate and maintain PerkinElmer NexION ICP-MS for Laser Ablation (LA) ICP-MS.
- Research and methods development pertaining to LA-ICP-MS and digestion of complex matrices.
- Directly responsible for the operation and maintenance of a PerkinElmer 7300V ICP OES.

**Research Associate, Syracuse University** 08/01/18 – 05/01/19

- Perform statistical analyses and develop graphics for research manuscripts submitted to peer-reviewed international scientific journals.
- Coordinate with Supervisors and Staff to gather, analyze, and communicate recommendations regarding lab operations, scheduling, and budget.
- Compose scripts in NI LabVIEW and Python for data reduction calculations.
- Managed all phases of the design process for design and development of UHV parts and assemblies, including: measuring, drafting in Canvas and FreeCAD, dimensioning, and tolerance.

**Faculty Research Assistant, Oregon State University** 02/01/18 – 08/01/18

- Directly responsible for several aspects of geochronology services such as fieldwork, laboratory sample preparation, analytical analyses, and reviewing raw and corrected data.
- Oversight of program performance metrics for tracking program schedule, budget analysis, and data quality.
- Generate spreadsheets and datasets, perform statistical analyses, and develop graphics pertaining to mineral geochronology research.
- Compose manuscripts for submission to peer-reviewed international scientific journals.
- Maintain operation, troubleshooting, and repairing of vacuum and analytical equipment.
- Work professionally and efficiently in supervising lab technicians and ensuring a quality product.

**Graduate Research Assistant, Stanford University** 06/01/13 – 12/31/17

- Conduct several aspects of geologic fieldwork in Brooks Range (AK) and Basin and Range (ID, NV) including: field observations and documentation, rock and mineral identification, structural measurements, and geologic map construction.
- Utilize ArcGIS in the construction and compilation of geologic maps and geospatial databases, including: generation of shapefiles, plotting sampling areas, and digitizing topography.
- Prepare samples and perform analyses using a wide range of analytical equipment (gas source mass spectrometer, LA-ICPMS, SIMS, EMPA, SEM, FT-IR, and Raman spectroscopy).
- Generate spreadsheets and large datasets, perform statistical analyses, and develop graphics pertaining to mineral geochronology research.
- Utilize effective and excellent communication skills to present new results at laboratory group and yearly committee meetings in addition to professional international conferences.

- Constructed and compiled maps, analytical results, figures, and observations for technical reports and peer-reviewed international scientific journal publication.

**Researcher, SLAC National Accelerator Laboratory** 06/01/12 – 06/01/13

- Communicate with Supervisors monthly progress reports.
- Work collaboratively with researchers and safety team on proper procedures for handling hazardous materials.
- Meticulously prepared soil samples in an oxygen-free environment and analyzed using XRF and Total Organic Carbon Chromatography.
- Assisted in the preparation of a peer-reviewed international scientific published manuscript.

**Graduate Research Assistant, Univ. of Michigan** 09/01/09 – 04/31/12

- Conduct several aspects of geologic fieldwork, including: field observations and documentation, rock and mineral identification, structural measurements, and collection of glass and clay material.
- Perform centrifuge grain-size separations of clay material for analyses.
- Generate digital topographic and geologic maps using ArcGIS.
- Digitize chemical data reported in various formats into highly accurate digital maps
- Generate spreadsheets and datasets, perform statistical analyses, and develop graphics pertaining to mineral geochronology research.
- Prepare data visualizations for manuscripts submitted to peer-reviewed scientific journals and presentations at laboratory meetings and conferences.
- Preparation of course material and instruct upper-level undergraduate courses (Structural Geology and Geologic Field Mapping).

**Graduate Teaching Assistant, University of Kentucky** 08/01/07 – 04/31/09

- Conduct several aspects of geologic fieldwork, including: field observations and documentation, rock and mineral identification, structural measurements, and geologic map construction.
- Compiled geologic data and GPS coordinates for the production of a 1:24,000 scale quadrangle map using ArcGIS.
- Utilize ArcGIS to generate a large geospatial datasets of geochronology/geochemistry data to develop models for tectonic reconstructions of the northern Appalachians
- Preparation of course material and instruct undergraduate courses (Petrology, Mineralogy, Structural Geology and Introduction to Geologic Field Mapping).

## **Publications**

**O'Brien, T.,** Alonso, E., and Nassar, N., *In Prep*, Simplified cost estimate model for Rare Earth mining and recovery projects: *In prep for Mineral Economics*.

**O'Brien, T.,** Grove, M., 2020 Subduction accretion, thermal overprinting, and exhumation of high-pressure/low-temperature metasedimentary rocks of the south-central Brooks Range: *International Geology Review*, DOI: 10.1080/00206814.2020.1841684.

**O'Brien, T.,** Miller, E.L., Pease, V., Hayden, L., Fisher, C., Hourigan, J., Vervoort, J., 2018, Provenance, U-Pb detrital zircon geochronology, Hf isotopic analyses, and Cr-spinel geochemistry of the northeast Yukon Koyukuk Basin, AK: Implications for Alaska interior basin development and sedimentation in Alaska: *Geological Society of America Bulletin*, v 130, p. 825-847.

Miller, E.L., Meisling, K.E., Akinin, V.V., Brumley, K., Coakley, B.J., Gottlieb, E.S., Hoiland, C.W., **O'Brien, T.M.,** Soboleva, A., and Toro, J., 2017, Circum-Arctic Lithosphere Evolution (CALE) Transect C: Displacement of the Arctic-Alaska – Chukotka microplate toward the Pacific during opening of the

Amerasia Basin of the Arctic, in Pease, V., and Coakley, B., eds., *Circum-Arctic Lithosphere Evolution*: Geological Society, London, Special Publications, v. 460, <https://doi.org/10.1144/SP460.9>.

Massey, M.A., Moecher, D.P., Walker, T.B., O'Brien, T.M., Rohrer, L.M., The role and extent of dextral transpression and lateral escape on the post-Acadian tectonic evolution of south-central New England: *American Journal of Science*, v. 317, p. 34-94.

O'Brien, T., Miller, E., Benowitz, J., Meisling, K., Dumitru, T., (2016) Dredge samples from the Chukchi Borderland: Implications for paleogeographic reconstruction and tectonic evolution of the Amerasia Basin of the Arctic: *American Journal of Science*, v. 316, p. 873-924

Janot, N., Lezama Pacheco, J. Pham, D., O'Brien, T., Hausladen, D., Noël, V., Lallier, F., Maher, K., Fendorf, S., Williams, K., Long, P., Bargar, J., (2015) Physico-chemical heterogeneity of organic-rich sediments in the Rifle aquifer, CO: Impact on uranium biogeochemistry: *Environmental Science and Technology*, v. 50, p. 46-53.

O'Brien, T., Miller, E., (2014) Continuous zircon growth during long-lived granulite facies metamorphism: A microtextural, U-Pb, Lu-Hf and trace element study of Caledonian rocks from the Chukchi Borderland, Arctic Ocean: *Contributions to Mineralogy and Petrology*, v. 168, p. 1-19.

O'Brien, T., van der Pluijm, B.A., (2012) Timing of Iapetus Ocean rifting from Ar geochronology of pseudotachylytes in the St. Lawrence rift system of southern Quebec: *Geology*, v. 40, p. 443-446.

### **Drafted Reports**

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U.S. Department of Energy, Office of Fossil Energy and Carbon Management, *Multi-Year Program Plan for Division of Minerals Sustainability*. October, 2021.

[https://www.energy.gov/sites/default/files/2021-10/MSD%20Multi-Year%20Program%20Plan%202021\\_0.pdf](https://www.energy.gov/sites/default/files/2021-10/MSD%20Multi-Year%20Program%20Plan%202021_0.pdf)

U.S. Department of Energy, Office of Fossil Energy and Carbon Management, *Wyoming State Critical Mineral Resource Opportunities in a Decarbonized Economy Study*.

The Pennsylvania State University Center for Critical Minerals, [\*Secondary Cobalt and Manganese Resources in Pennsylvania: Quantities, Linkage with Mine Reclamation, and Preliminary Flowsheet Evaluation for the U.S. Domestic Lithium-Ion Battery Supply Chain\*](#).

U.S. Department of Energy, Office of Fossil Energy and Carbon Management, *Report: Evaluating the Development of Advanced Separation Technologies for the Extraction and Recovery of Rare Earth Elements and other Critical Minerals from Coal and Coal Byproducts*.