Curriculum Vitae - Mihai N. Ducea

Address: University of Arizona, Department of Geosciences,
Tucson, Arizona 85721-0077
Phone: (520) 665-1254; **E-mail**: ducea@email.arizona.edu

1. Education

California Institute of Technology, Ph.D. (Geology), 1998
Advisor: Prof. Jason Saleeby
California Institute of Technology, M.S. (Geology), 1995
Advisors: Prof. Jason Saleeby and Prof. Peter Wyllie
University of Bucharest, Romania, Diploma of Geology Engineer, 1991
Advisor: Prof. Marin Seclaman and Prof. Emil Constantinescu

2. *Professional Experience*

Research Scientist, University of Bucharest, Romania (11/11- present)
Professor, Department of Geosciences, University of Arizona (09/09-present)
Associate Professor, Department of Geosciences, University of Arizona (04/04-09/09)
Assistant Professor, Department of Geosciences, University of Arizona (1/01-04/04)
Postdoctoral Scholar, Caltech and Florida International University (10/98-12/00)
Graduate Student, California Institute of Technology (4/94-9/98)
Graduate Student, Department of Geology, Duke University (6/92-3/94)
Teaching Assistant, University of Bucharest (9/91-3/92)

3. Research

Summary: I am a tectonic petrologist, focusing on a variety of problems from subduction related (magmatism, subduction erosion, delamination) to extension and collision of the continents. I investigate mineral evolution, cyclicity of orogens, sutures, transform faults, and metamorphism in collisional belts among others. Regions of interest are the western North American Cordillera, the central Andes, the Pamirs, the Carpathians and Balkan Mountains, mainland Asia from Mongolia to Tibet, and others. At Univ. Arizona I oversee a trace elemental geochemical + radiogenic isotopic (TIMS) facility. With students and collaborators, I wrote about 160 peer reviewed papers including journal papers and chapters in books. I collaborate with over 800 co-authors from 27 countries. My H-index is 42 in WOS, 44 in Scopus and 52 -Google Scholar. I have around 8900 citations in Google Scholar and around 6000 in WOS in about 21 (close to 22) years post PhD. I strive to keep an (H index)/(number of years post PhD) of 2 (Web of Science) or above (Scopus, Scholar). My papers range from regional geology to technique development, global data analysis and exploring new concepts in tectonic research. I collaborate with geophysicists, climate change scientists, archeologists, paleontologists, as the publication record shows. I purposely have maintained a wide range of interests in Earth Sciences from my early career on in an effort to have a broad handle on geologic problems. This should be evident in my publication record ranging from regional geology and recognition of fault systems to development of better isotopic techniques, from crustal evolution studies based on zircon petrochronology to carbonate subduction, from arc tempos to delamination of arc roots, etc.

My research so far was centered on ten major topics in petrology, geochemistry and field geology:

1. Crust mantle exchange at subduction systems. I study exposed arc lower crustal sections at various locations in order to quantify the exchange between crust and mantle via magmatism and foundering. My PhD thesis has the first to document igneous cumulate and residues as eclogite facies rocks under arcs (known today as *arclogites*) and the hypothesis of arc root foundering under thick continental arcs.
2. Fluxes and tempos of arc magmatism. We use granitoid geochronology and field constraints to quantify regional and global fluxes of magmas in arcs and find causes for the non-steady state behavior of arcs.
3. Regional geology. I contribute to regional geology studies (most recently in the Carpathians) via geologic mapping and geochronology and thermochronology with a particular focus on basement terrains.
4. Sm-Nd, Rb-Sr and other geochronology applied to igneous and metamorphic rocks. I oversee a TIMS and ICP-MS laboratory where we push the envelope of various geochronologic techniques, with a focus on metamorphic geochronology.
5. Ultra shallow subduction. We study the field evidence for underplating mechanisms and their consequences for convergent margin evolution. The focus so far was on Western North America and Mexico.
6. Crustal and mantle xenoliths. I have a long-term interest in using xenoliths as tectonic tracers of lithospheric composition and evolution.
7. Mineral evolution. We study the linkages between tectonic processes in a Wilson cycle and the distribution of mineral species on continental regions.
8. Geophysics and petrology of deep arcs. I am invested in collaboration with geophysics groups (seismologists and other geophysicists) to decipher the composition and extent of magma bodies under subduction systems.
9. Basalt petrology. We use the geochemistry of basalts from various regions to test for magnitude of extension, provide tests of delamination and other tectonic processes in various continental regions.
10. Geochemistry and crustal thickness over time. We use intermediate rock trace elemental geochemistry and that of derivative trace minerals (zircon, apatite) to quantify crustal thickness evolution over time in orogenic regions.

4. Teaching/advising

Summary: My teaching duties and interests span the undergraduate and graduate curriculum and also include shorter topical seminars for the most advanced scholar. Most of my teaching activities are performed at University of Arizona, although I did teach shorter modules and more advanced course at other Universities (China University of Geosciences, University of Concepcion, University of Bucharest and UBB Cluj. I have a series of short courses on geochronology, geochemistry and other novel developments of use to the oil and gas industries. They have been presented in short modules at Chevron, OMV, Ecopetrol and other large corporations. Most recurrent class I teach for U Arizona is Undergraduate Petrology (Igneous and Metamorphic). I am in the final stages of completing a Petrology textbook (Ducea and Sen, Springer, 2020 or 2021), which used to be Sen (2014) in its first edition. It is a new way of looking at petrology, with

limited phase diagrams and a more comprehensive geochemical approach and a tectonic framework for understanding melting and metamorphism.

Courses taught:

- Petrology (undergraduate)
- Field Camp (undergraduate)
- Physical Geology (undergraduate)
- Structural Geology (undergraduate)
- Geochronology/thermochronology (undergad/grad)
- Tectonic Petrology (graduate course)
- Regional Tectonics (graduate course)
- Chemical evolution of the Earth (new graduate course for 2021)
- Hot Spots (graduate course or seminar)
- Alpine and Carpathian geology (grad seminar)

Outstanding students and postdocs: Undergraduates: Thereza Kayzar, Guleed Ali, Jordan Krcmaric, Derek Hoffman. Graduate students: Steven Kidder, David Barbeau, Christian Manthei, David Pearson, Mary Robinson Cecil, Jay Chapman, Kendra Murray, Lucia Profeta, Fangyang Hu, Emily Bowman, Anca Barla, Roxana Galiceanu. Postdocs: Alexander Robinson, Alan Chapman, Paul Wetmore, Antoine Triantafyllou, Constantin Balica, Lyung Zhang, Fuhao Xiong, Yunchuan Zeng.

*5. **Honors & Awards***

Koons Graduate Fellowship, 1998
GSA fellow, 2016
AGU Fellow, 2017
Dida Scholar, China University of Geosciences, Wuhan, 2016-2019
Fulbright Scholar, 2017-2018

*6. **Scholarly Presentations (past 5 years)***

Oregon State University, Istanbul Technical University, Stanford University, China University of Geosciences Wuhan, China University of Geosciences Beijing, University of Oslo, Babes Bolyai University of Cluj Napoca, University of Bucharest, University of Liege, University of Brussels, University of Leicester

Keynote talk GSA Phoenix 2019
Invited talk at the Annual Goldschmidt Conference, August, 2015, Prague
Keynote Speaker GSA Indianapolis 2018

7. Service/Outreach

Summary: I have served on numerous departmental committees at Arizona, as well as for the GSA and AGU. I serve on departmental committees at U Arizona and occasionally at U Bucharest. I am now helping the U Bucharest organize a new research structure (iCUB) and was asked to lead the Earth and Life Science division for a 2-year term, while I will be on sabbatical for the 2020-2021 academic year. I am a chief editor for GSA Today and serve on the publication committee at GSA. I am providing countless reviews for journals and funding agencies throughout the world (USA, China, Hong Kong, Poland, Ukraine, Chile, Argentina, Romania – these only for the past year, 2019). Major community service efforts are currently focused on giving talk on the nature and significance of Earth Sciences to high-schools in Arizona and Romania. I am first generation college educated and am dedicated to helping children from poor socio-economic backgrounds from across the globe (in areas where my works brings me to) become scientists. I am also heavily invested in helping the Romanian academic community grow internationally competitive in STEM and since 2013 have served on panels and committees at various University levels (U Bucharest and U Cluj) as well as at the National Ministry of Education and Research.

Highlights (top 10) of my service/synergistic activities (past 5 years):

1. Serving on numerous departmental committees (Performance Evaluation, Graduate Policy, Various Hiring Committees, Promotion and Tenure, Field Camp);
2. Working with National Association of Geosciences Teachers (field trips, mini-courses);
3. Contributions to development of NSF Earthscope's GEOFRAME initiative;
4. Organizing and chairing several GSA, AGU and Goldschmidt topical sessions to highlight new avenues in Petrology and Tectonics research;
5. Serving on publication committee at GSA (and co-chaired it in 2019)
6. Co-Edited a GSA Memoir volume: DeCelles, P.G., Ducea, M.N., Carrapa B., and Kapp, P. (editors), "Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile", Geological Society of America Memoir, 2015;
7. Co-Edited volume on "Tethysides in Central and Eastern Europe", with Celal Sengor, Hans Thybo and Ogus Goguz, in press, 2020, Tectonics;
8. Director (Pro-bono) of the Earth Science Division of the Research Institute of the University of Bucharest; iCUB, 2020-2021
9. National Science Foundation Panelist (GEOPRISMS, Petrology, Tectonics);
10. Finalist of NSF Idea Machine competition for developing new programs at NSF (With collaborators Barbara Carrapa and Mihai Surdeanu, U Arizona), with an Artificial Intelligence in Geoscience project, 2019.

Current Editorial Services

Tectonics, Associate Editor (2018 -present);

International Geology Review, Associate Editor (2016 – 2021),
GSA Today, Chief Editor (2018-2021)

Numbers of Manuscripts and Proposals Reviewed

425 manuscripts reviewed between 2000-2019 (e.g. Nature, Tectonics, J Petrology, Geology, JGR, GSA Bull, Contributions to Mineralogy and Petrology, etc.);
227 proposals reviewed between 2000-2019 (for NSF, PRF, and other national and international organizations).

8. ***Funding***

In my 19 years as a faculty member at University Arizona and more recently as a researcher at University of Bucharest, I have successfully secured research grants and industry contracts as a principal investigator and co-principal investigator. A complete list of grants, contracts and service contracts (laboratory work for third party contractors) is available on request. I do not keep a detailed financial evidence of these, but the University of Arizona and the University of Bucharest do. Below, I provide a list of some of the most important grants in my career development.

US Federal and Private competitive funding:

- Rare earth elements tracing crustal evolution through time: a detrital zircon study - NSF-Tectonics; $ 230,991, 07/01/17-6/30/20.

- Constraints on Plateau Architecture and Assembly From Deep Crustal Xenoliths, Northern Altiplano (Southern Peru), Program: NSF Petrology-Geochemistry, $ 154, 000, 07/01/15-6/30/17.

- Crustal Overturn in Continental Margin Arcs During Magmatic Surges NSF Tectonics, $ 297, 752, 06/01/2011-5/31/2014)

- Collaborative Research: The suturing process: Insight from the India-Asia collision zone NSF Continental Dynamics, University of Arizona, $1,958,673, 04/01/11 – 03/30/15 (CO-PI)

- In Pursuit of missing Andean Lithosphere: constraining Late Cenozoic crust-mantle process in the Puna Plateau, central Andes NSF Tectonics, $368,796, 9/1/09 – 8/31/12

- Collaborative Research: CAUGHT: Central Andean Uplift and the Geodynamics of High ‘ Topography NSF Continental Dynamics, $1,935,391, 6/1/09 – 5/31/13 (CO-PI)

- Collaborative Research: Lithospheric removal: The Sierra Nevada as the prototype of a fundamental process in mountain building NSF Continental Dynamics, $194,999, 6/1/06 –5/31/10

- Facility Support: Completing the Western North American Volcanic and Intrusive Rock Database (NAVDAT) NSF Instrumentation-Facilities, Facilities support, $ 198,261. 9/1/06-8/31/08

- Collaborative Research: BATHOLITHS: Generation and evolution of crust in continental magmatic arcs; National Science Foundation (Continental Dynamics Program), $3,303,072, 1/04-1/09

- Igniting Continental Arcs; A Petrologic Study of Peridotites And Mafic Rocks From The Coast Ridge Belt, Santa Lucia Mountains (California), National Science Foundation (Petrology-Geochemistry Program), $221,700, 01/2003-12/2005

- Testing the degree of correspondence between surface tectonic features and upper mantle structure and composition by study of volcanic-hosted xenoliths in the southwestern Cordillera National Science Foundation (Tectonics Program), $225,000, 01/ 2001-12/2002

- Sm-Nd thermochronology of garnets in metamorphic rocks: A new method and tectonic application National Science Foundation (Petrology Program), $ 59,717, 01/2001-12/2002

- Collaborative Research: Laboratory and field studies linking electrical anisotropy and deformation in the mantle National Science Foundation (Geophysics Program), $126,145, 9,/2000-8/2001

- K-Ca Geochronology; New Analytical Developments Using Multicollector ICP-MS And Geologic Applications, American Chemical Society, Petroleum Research Fund, $135,000, 9/2006- 8/2009

- In-Situ U-Pb Age Determinations Using Multiple-Collector ICP Mass Spectrometry: Further Technique Developments and a Tectonic Application, American Chemical Society, Petroleum Research Fund, $135,000, 9/2002-8/2004

In Romania, Federal Funding (UEFISCDI):

-CUTE New Methods for Tracking Regional and Global Crustal Changes Using the Geochemical Record of Magmatic Rocks and Their Derivative Sediments **,** UEFISCDI, PCCF, 8,500,000 RON (aprox 2, 000,000 USD), 11/18-11/22.

- DRIPS - Geochemical Tests Of Lithospheric Delamination With Applications To Convergent Margin Tectonics, UEFISCDI, Proiect PCCE, 850,000 RON (aprox 200,000 USD), 6/17-12/19.

Representative industry contracts:

Isotopic techniques constrain the evolution of oil genesis in carbonate reservoirs, Chevron Energy Technology, (2010-2016)

Isotope techniques for cocoa source tracing: Mars Chocolate Company (2015-2018)

OMV-Petrom (2013-2014), The origin of Carpathian terranes.
OMV-Petrom (2013-2014), The origin of Carpathian terranes.

*9. **Publications***

Abstracts -over 270- are not listed here. Students and postdocs are shown in italics.

Chapters in Scholarly Books and Monographs

B1. Ducea, M.N., and Saleeby, J.B., A case of delamination of the deep batholithic crust beneath the Sierra Nevada, California, in Ernst, W.G. and Nelson, C.A. (editors), Integrated Earth and Environmental Evolution of the Southwestern United States, p. 273-288, 1998.

B2. Dickinson, W.R., Ducea, M.N., Rosenberg, L., Greene H.G., Graham, S., Clark, J., Weber, G.E., *Kidder, S*., Ernst, W.G., Tectonic relations and net dextral slip, late Neogene San Gregorio-Hosgri fault zone, coastal California, GSA Special Paper, v. 391, 43 pages, 2005.

B3. Saleeby, J.B., Ducea, M.N., Busby, C.J., Nadin, E.S., and Wetmore, P.H., Chronology of pluton emplacement and regional deformation in the southern Sierra Nevada Batholith, California: Geological Society of America, Special Paper, v. 438 doi: 10.1130/2008.2438 (14), 397-427, 2008.

B4. Ducea, M.N., *Kayzar, T., and Wetmore, P*., High Precision 87Sr/86Sr Analyses Using Multi Collector ICP-MS, in Mineralogy and Geodiversity, Anastasiu, N. (editor), Romanian Academy of Sciences Special Volume, p. 151-160, 2010.

B5. *Wetmore, P.H.,* Hughes, S., Stremtam, C., Ducea, M.N., The tectonic implications of post-contractional magmatism of the Alisitos arc segment of the Peninsular Ranges, Baja California, Mexico, Geological Society of America Special Paper, v. 211, p. 669-690, 2014.

B6. Becker, T., Summa, L., and Ducea, M.N., Temporal growth of the Puna plateau and its bearing on the formation 1 of the Metan foreland basin, northwest Argentina, in DeCelles, P.G., Ducea, M.N., Carrapa B., and Kapp, P., (editors), "Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile", Geological Society of America Memoir, v. 212, p. 407-434, 2015.

B7. Ducea, M.N., Otamendi, J., Bergantz G.W., Jianu. D., Petrescu, L., Constraints on the origin of the Ordovician Fa matinian-Puna Arc, in DeCelles, P.G., Ducea, M.N., Carrapa B., and Kapp, P., (editors), "Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile", Geological Society of America Memoir, vol. 212, p. 125-139, 2015.

B8. *Murray, K.E.,* Ducea, M.N., Schoenbohm, L., Mafic lavas on the Puna plateau sample the diverse lithospheric architecture of the long-lived central Andean orogeny, in DeCelles, P.G., Ducea, M.N., Carrapa B., and Kapp, P., (editors), "Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile", Geological Society of America Memoir, v. 212, p. 139-166, 2015.

B9. De Celles, P.G., Zandt, G., Beck, SL, Currie, C., Ducea, M.N., Carrapa, B., Reiners, P.W., Quade, J., Kapp, P., and Gehrels, G.E., Cyclical Orogenic Processes in the Central Andes, in DeCelles, P.G., Ducea, M.N., Carrapa B., and Kapp, P. (editors), "Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile", Geological Society of America Memoir, v. 212, p. 459-490, 2015.

B10. Currie, C., Ducea, M.N., and DeCelles, P.G., Geodynamic models of Cordilleran orogens: Gravitational instability of magmatic arc roots, in DeCelles, P.G., Ducea, M.N., Carrapa B., and Kapp, P. (editors), "Geodynamics of a Cordilleran Orogenic System: The Central Andes of Argentina and Northern Chile", Geological Society of America Memoir, 212, p. 1-22; 2015

Refereed publications

1. Park, S.K., Clayton, R.W., Ducea, M.N., Wernicke, B., Jones, C.H., Ruppert, S.D., 1995. Project combines seismic and magnetotelluric surveying to address the Sierran root question. Eos, Transactions American Geophysical Union 76, 297-298.

2. Wernicke, B., Clayton, R., Ducea, M., Jones, C.H., Park, S., Ruppert, S., Saleeby, J., Snow, J.K., Squires, L., Fliedner, M., 1996. Origin of high mountains in the continents: The southern Sierra Nevada. Science 271, 190-193.

3. Ducea, M.N., Saleeby, J.B., 1996. Buoyancy sources for a large, unrooted mountain range, the Sierra Nevada, California: Evidence from xenolith thermobarometry. Journal of Geophysical Research: Solid Earth 101, 8229-8244.

4. Ducea, M.N., Saleeby, J.B., 1998. The age and origin of a thick mafic–ultramafic keel from beneath the Sierra Nevada batholith. Contributions to Mineralogy and Petrology 133, 169-185.

5. Ducea, M., Saleeby, J., 1998. A case for delamination of the deep batholithic crust beneath the Sierra Nevada, California. International Geology Review 40, 78-93.

6. Ducea, M., Saleeby, J., 1998. Crustal recycling beneath continental arcs: silica-rich glass inclusions in ultramafic xenoliths from the Sierra Nevada, California. Earth and Planetary Science Letters 156, 101-116.

7. Gao, S.., Ducea, M.N., Zhenmin, J., Saleeby, J., 1998. Lower crustal delamination and evolution of continental crust. Geological Journal of China Universities 4, 241-249.

8. Ducea, M.N., McInnes, B.I.A., Wyllie, P.J., 1999. Experimental determination of compositional dependence of hydrous silicate melts on sulfate solubility. European Journal of Mineralogy-Ohne Beihefte 11, 33-44.

9. Ducea, M., 1999. 1.57-Ga magmatism in the South Carpathians: implications for the pre-Alpine basement and evolution of the mantle under the European continent: a discussion. The Journal of Geology 107, 733-736.

10. Ducea, M.N., Park, S.K., 2000. Enhanced mantle conductivity from sulfide minerals, southern Sierra Nevada, California. Geophysical Research Letters 27, 2405-2408.

11. Ducea, M., 2001. The California arc: Thick granitic batholiths, eclogitic residues, lithospheric-scale thrusting, and magmatic flare-ups. GSA today 11, 4-10.

12. Ducea, M., Sen, G., Eiler, J., *Fimbres, J.,* 2002. Melt depletion and subsequent metasomatism in the shallow mantle beneath Koolau volcano, Oahu (Hawaii). Geochemistry, Geophysics, Geosystems 3, doi:10.1029/2001GC000184.

13. Ducea, M.N., 2002. Constraints on the bulk composition and root foundering rates of continental arcs: A California arc perspective. Journal of Geophysical Research: Solid Earth 107, doi:10.1029/2001JB000643.

14. Ducea, M., House, M.A., Kidder, S., 2003. Late Cenozoic denudation and uplift rates in the Santa Lucia Mountains, California. Geology 31, 139-142.

15. Ducea, M.N., Kidder, S., Zandt, G., 2003. Arc composition at mid-crustal depths: Insights from the Coast Ridge Belt, Santa Lucia Mountains, California. Geophysical Research Letters 30, doi:10.1029/2002GL016297.

16. Ducea, M.N., Ganguly, J., *Rosenberg, E.J.,* Patchett, P.J., Cheng, W., Isachsen, C., 2003. Sm–Nd dating of spatially controlled domains of garnet single crystals: a new method of high-temperature thermochronology. Earth and Planetary Science Letters 213, 31-42.

17. Ducea, M.N., Lutkov, V., Minaev, V.T., Hacker, B., Ratschbacher, L., *Luffi, P.,* Schwab, M., Gehrels, G.E., McWilliams, M., Vervoort, J., 2003. Building the Pamirs: The view from the underside. Geology 31, 849-852.

18. *Kidder, S.,* Ducea, M., Gehrels, G., Patchett, P.J., Vervoort, J., 2003. Tectonic and magmatic development of the Salinian Coast Ridge belt, California. Tectonics 22, doi:10.1029/2002TC001409.

19. Medaris Jr, G., Ducea, M., Ghent, E., Iancu, V., 2003. Conditions and timing of high-pressure Variscan metamorphism in the South Carpathians, Romania. Lithos 70, 141-161.

20. Park, S.K., Ducea, M.N., 2003. Can in situ measurements of mantle electrical conductivity be used to infer properties of partial melts? Journal of Geophysical Research: Solid Earth 108, doi:10.1029/2002JB001899.

21. Saleeby, J., Ducea, M., Clemens-Knott, D., 2003. Production and loss of high-density batholithic root, southern Sierra Nevada, California. Tectonics 22, doi:10.1029/2002TC001374.

22. Sen, G., Yang, H.-J., Ducea, M., 2003. Anomalous isotopes and trace element zoning in plagioclase peridotite xenoliths of Oahu (Hawaii): implications for the Hawaiian plume. Earth and Planetary Science Letters 207, 23-38.

23. Ducea, M.N., Gehrels, G.E., *Shoemaker, S.,* Ruiz, J., *Valencia, V.A*., 2004. Geologic evolution of the Xolapa Complex, southern Mexico: Evidence from U-Pb zircon geochronology. Geological Society of America Bulletin 116, 1016-1025.

24. Ducea, M.N., *Valencia, V.A., Shoemaker*, S., Reinders, P.W., DeCelles, P.G., Campa, M.F., Moran-Zenteno, D., Ruiz, J., 2004. Geodesy and Gravity/Tectonophysics-B09404-Rates of sediment recycling beneath the Acapulco trench: Constraints from (U-Th)/He thermochronology. Journal of Geophysical Research-Part B-Solid Earth 109, doi:10.1029/2004JB003112.

25. Zandt, G., Gilbert, H., Owens, T.J., Ducea, M., Saleeby, J., Jones, C.H., 2004. Active foundering of a continental arc root beneath the southern Sierra Nevada in California. Nature 431, 41-46.

26. *Barbeau Jr, D.L*., Ducea, M.N., Gehrels, G.E., Kidder, S., Wetmore, P.H., Saleeby, J.B., 2005. U-Pb detrital-zircon geochronology of northern Salinian basement and cover rocks. Geological Society of America Bulletin 117, 466-481.

27. Ducea, M.N., Saleeby, J., Morrison, J., *Valencia, V.A.,* 2005. Subducted carbonates, metasomatism of mantle wedges, and possible connections to diamond formation: an example from California. American Mineralogist 90, 864-870.

28. Hacker, B., *Luffi, P.,* Lutkov, V., Minaev, V., Ratschbacher, L., Plank, T., Ducea, M., Patiño-Douce, A., McWilliams, M., Metcalf, J.I.M., 2005. Near-ultrahigh pressure processing of continental crust: Miocene crustal xenoliths from the Pamir. Journal of Petrology 46, 1661-1687.

29. Root, D.B., Hacker, B.R., Gans, P.B., Ducea, M.N., Eide, E.A., Mosenfelder, J.L., 2005. Discrete ultrahigh-pressure domains in the Western Gneiss Region, Norway: implications for formation and exhumation. Journal of Metamorphic Geology 23, 45-61.

30. *Valencia, V.A.,* Ruiz, J., Barra, F., Geherls, G., Ducea, M., Titley, S.R., Ochoa-Landín, L., 2005. U–Pb zircon and Re–Os molybdenite geochronology from La Caridad porphyry copper deposit: insights for the duration of magmatism and mineralization in the Nacozari District, Sonora, Mexico. Mineralium Deposita 40, 175-191.

31. Zeng, L., Saleeby, J.B., Ducea, M., 2005. Geochemical characteristics of crustal anatexis during the formation of migmatite at the Southern Sierra Nevada, California. Contributions to Mineralogy and Petrology 150, 386-402.

32. Brady, R.J., Ducea, M.N., *Kidder, S.B.,* Saleeby, J.B., 2006. The distribution of radiogenic heat production as a function of depth in the Sierra Nevada Batholith, California. Lithos 86, 229-244.

33. *Cecil, M.R.,* Ducea, M.N., Reiners, P.W., Chase, C.G., 2006. Cenozoic exhumation of the northern Sierra Nevada, California, from (U-Th)/He thermochronology. Geological Society of America Bulletin 118, 1481-1488.

34. Ducea, M.N., Gehrels, G.E., *Shoemaker, S.,* Ruiz, J., Valencia, V.A., 2006. Geologic evolution of the Xolapa Complex, southern Mexico: Evidence from U-Pb zircon geochronology: Reply. Geological Society of America Bulletin 118, 766-767.

35. *Kidder, S.,* Ducea, M.N., 2006. High temperatures and inverted metamorphism in the schist of Sierra de Salinas, California. Earth and Planetary Science Letters 241, 422-437.

36. *Wagner, L.S.,* Beck, S., Zandt, G., Ducea, M.N., 2006. Depleted lithosphere, cold, trapped asthenosphere, and frozen melt puddles above the flat slab in central Chile and Argentina. Earth and Planetary Science Letters 245, 289-301.

37. Ducea, M.N., Barton, M.D., 2007. Igniting flare-up events in Cordilleran arcs. Geology 35, 1047-1050.

38. Horodyskyj, U.N., Lee, C.-T.A., Ducea, M.N., 2007. Similarities between Archean high MgO eclogites and Phanerozoic arc-eclogite cumulates and the role of arcs in Archean continent formation. Earth and Planetary Science Letters 256, 510-520.

39. *Johnston, S.,* Hacker, B.R., Ducea, M.N., 2007. Exhumation of ultrahigh-pressure rocks beneath the Hornelen segment of the Nordfjord-Sogn Detachment Zone, western Norway. Geological Society of America Bulletin 119, 1232-1248.

40. Blondes, M.S., Reiners, P.W., Ducea, M.N., Singer, B.S., Chesley, J., 2008. Temporal–compositional trends over short and long time-scales in basalts of the Big Pine Volcanic Field, California. Earth and Planetary Science Letters 269, 140-154.

41. McQuarrie, N., Robinson, D., Long, S., Tobgay, T., Grujic, D., Gehrels, G., Ducea, M., 2008. Preliminary stratigraphic and structural architecture of Bhutan: Implications for the along strike architecture of the Himalayan system. Earth and Planetary Science Letters 272, 105-117.

42. *Ali, G.A.H.,* Reiners, P.W., Ducea, M.N., 2009. Unroofing history of Alabama and Poverty Hills basement blocks, Owens Valley, California, from apatite (U–Th)/He thermochronology. International Geology Review 51, 1034-1050.

43. Balintoni, I., *Balica, C.,* Ducea, M.N., Chen, F., Hann, H.P., Şabliovschi, V., 2009. Late Cambrian–Early Ordovician Gondwanan terranes in the Romanian Carpathians: a zircon U–Pb provenance study. Gondwana Research 16, 119-133.

44. DeCelles, P.G., Ducea, M.N., Kapp, P., Zandt, G., 2009. Cyclicity in Cordilleran orogenic systems. Nature Geoscience 2, 251-257.

45. *Drew, S.T.,* Ducea, M.N., Schoenbohm, L.M., 2009. Mafic volcanism on the Puna Plateau, NW Argentina: Implications for lithospheric composition and evolution with an emphasis on lithospheric foundering. Lithosphere 1, 305-318.

46. Ducea, M.N., *Kidder, S.,* Chesley, J.T., Saleeby, J.B., 2009. Tectonic underplating of trench sediments beneath magmatic arcs: The central California example. International Geology Review 51, 1-26.

47. Gehrels, G., Rusmore, M., Woodsworth, G., Crawford, M., Andronicos, C., Hollister, L., Patchett, J., Ducea, M., Butler, R., Klepeis, K., 2009. U-Th-Pb geochronology of the Coast Mountains batholith in north-coastal British Columbia: Constraints on age and tectonic evolution. Geological Society of America Bulletin 121, 1341-1361.

48. *Luffi, P.,* Saleeby, J.B., Lee, C.T.A., Ducea, M.N., 2009. Lithospheric mantle duplex beneath the central Mojave Desert revealed by xenoliths from Dish Hill, California. Journal of Geophysical Research: Solid Earth 114, doi:10.1029/2008JB005906.

49. Otamendi, J.E., Ducea, M.N., Tibaldi, A.M., Bergantz, G.W., de la Rosa, J.D., Vujovich, G.I., 2009. Generation of tonalitic and dioritic magmas by coupled partial melting of gabbroic and metasedimentary rocks within the deep crust of the Famatinian magmatic arc, Argentina. Journal of Petrology 50, 841-873.

50. *Valencia, V.A.,* Ducea, M., Talavera-Mendoza, O., Gehrels, G., Ruiz, J., Shoemaker, S., 2009. Geocronología U-Pb de granitoides del límite noroeste del terreno Xolapa. Revista Mexicana de ciencias geológicas 26, 189-200.

51. Balintoni, I., *Balica, C.,* Ducea, M.N., Hann, H.P., Şabliovschi, V., 2010. The anatomy of a Gondwanan terrane: the Neoproterozoic–Ordovician basement of the pre-Alpine Sebeş–Lotru composite terrane (South Carpathians, Romania). Gondwana Research 17, 561-572.

52. Balintoni, I., *Balica, C.,* Ducea, M.N., Zaharia, L., Chen, F., Cliveţi, M., Hann, H.P., Li, L.-Q., Ghergari, L., 2010. Late Cambrian–Ordovician northeastern Gondwanan terranes in the basement of the Apuseni Mountains, Romania. Journal of the Geological Society 167, 1131-1145.

53. Balintoni, I., *Balica, C*., Seghedi, A., Ducea, M.N., 2010. Avalonian and Cadomian terranes in north Dobrogea, Romania. Precambrian Research 182, 217-229.

54. *Cecil M.R.,* Ducea, M.N., Reiners, P., Gehrels, G., Mulch, A., Allen, C., Campbell, I., 2010. Provenance of Eocene river sediments from the central northern Sierra Nevada and implications for paleotopography. Tectonics 29, doi:10.1029/2010TC002717.

55. *Calkins, J.A.,* Zandt, G., Girardi, J., Dueker, K., Gehrels, G.E., Ducea, M.N., 2010. Characterization of the crust of the Coast Mountains Batholith, British Columbia, from P to S converted seismic waves and petrologic modeling. Earth and Planetary Science Letters 289, 145-155.

56. *Chapman, A.D., Kidder, S.,* Saleeby, J.B., Ducea, M.N., 2010. Role of extrusion of the Rand and Sierra de Salinas schists in Late Cretaceous extension and rotation of the southern Sierra Nevada and vicinity. Tectonics 29, doi:10.1029/2009TC002597.

57. Ducea, M.N., Otamendi, J.E., Bergantz, G., *Stair, K.M., Valencia, V.A*., Gehrels, G.E., 2010. Timing constraints on building an intermediate plutonic arc crustal section: U-Pb zircon geochronology of the Sierra Valle Fértil–La Huerta, Famatinian arc, Argentina. Tectonics 29, doi:10.1029/2009TC002615.

58. *Manthei, C.D.,* Ducea, M.N., Girardi, J.D., Patchett, P.J., Gehrels, G.E., 2010. Isotopic and geochemical evidence for a recent transition in mantle chemistry beneath the western Canadian Cordillera. Journal of Geophysical Research: Solid Earth 115, doi:10.1029/2009JB00656.

59. Tobgay, T., Long, S., McQuarrie, N., Ducea, M.N., Gehrels, G., 2010. Using isotopic and chronologic data to fingerprint strata: Challenges and benefits of variable sources to tectonic interpretations, the Paro Formation, Bhutan Himalaya. Tectonics 29, doi:10.1029/2009TC002637.

60. Balintoni, I., *Balica, C.,* Ducea, M.N., Stremţan, C., 2011. Peri-Amazonian, Avalonian-type and Ganderian-type terranes in the South Carpathians, Romania: the Danubian domain basement. Gondwana Research 19, 945-957.

61. Cardona, A., Valencia, V.A., Bayona, G., Duque, J., Ducea, M., Gehrels, G., Jaramillo, C., Montes, C., Ojeda, G., Ruiz, J., 2011. Early-subduction-related orogeny in the northern Andes: Turonian to Eocene magmatic and provenance record in the Santa Marta Massif and Rancheria Basin, northern Colombia. Terra Nova 23, 26-34.

62. *Cecil, M.R.,* Ducea, M.N., 2011. K–Ca ages of authigenic sediments: examples from Paleozoic glauconite and applications to low-temperature thermochronometry. International Journal of Earth Sciences 100, 1783-1790.

63. *Cecil, M.R.,* Gehrels, G., Ducea, M.N., Patchett, P.J., 2011. U-Pb-Hf characterization of the central Coast Mountains batholith: Implications for petrogenesis and crustal architecture. Lithosphere 3, 247-260.

64. Ducea, M.N., 2011. Fingerprinting orogenic delamination. Geology 39, 191-192.

65. González-León, C.M., Solari, L., Solé, J., Ducea, M.N., Lawton, T.F., Bernal, J.P., Becuar, E.G., Gray, F., Martínez, M.L., Santacruz, R.L., 2011. Stratigraphy, geochronology, and geochemistry of the Laramide magmatic arc in north-central Sonora, Mexico. Geosphere 7, 1392-1418.

66. *Martin, A.J.,* Ducea, M.N., 2011. Pre-Cenozoic peak metamorphism and deformation of Lesser Himalayan rocks in Nepal. Journal of Himalayan Earth Sciences 44, 1-30.

67. *Wetmore, P.H.,* Ducea, M.N., 2011. Geochemical evidence of a near-surface history for source rocks of the central Coast Mountains Batholith, British Columbia. International Geology Review 53, 230-260.

68. *Cecil, M.R., Rotberg, G.L*., Ducea, M.N., Saleeby, J.B., Gehrels, G.E., 2012. Magmatic growth and batholithic root development in the northern Sierra Nevada, California. Geosphere 8, 592-606.

69. *Chapman, A.D.,* Saleeby, J.B., Wood, D.J., Piasecki, A., Kidder, S., Ducea, M.N., Farley, K.A., 2012. Late Cretaceous gravitational collapse of the southern Sierra Nevada batholith, California. Geosphere 8, 314-341.

70. Cristofolini, E.A., Otamendi, J.E., Ducea, M.N., Pearson, D.M., Tibaldi, A.M., Baliani, I., 2012. Detrital zircon U–Pb ages of metasedimentary rocks from Sierra de Valle Fértil: Entrapment of Middle and Late Cambrian marine successions in the deep roots of the Early Ordovician Famatinian arc. Journal of South American Earth Sciences 37, 77-94.

71. *Economos, R.C.,* Paterson, S.R., Said, L.O., Ducea, M.N., Anderson, J.L., Padilla, A.J., 2012. Gobi-Tianshan connections: field observations and isotopes from an early Permian arc complex in southern Mongolia. Geological Society of America Bulletin 124, 1688-1701.

72. *Girardi, J.D.,* Patchett, P.J., Ducea, M.N., Gehrels, G.E., Cecil, M.R., Rusmore, M.E., Woodsworth, G.J., Pearson, D.M., Manthei, C., Wetmore, P., 2012. Elemental and isotopic evidence for granitoid genesis from deep-seated sources in the Coast Mountains Batholith, British Columbia. Journal of Petrology 53, 1505-1536.

73. Otamendi, J.E., Ducea, M.N., Bergantz, G.W., 2012. Geological, petrological and geochemical evidence for progressive construction of an arc crustal section, Sierra de Valle Fertil, Famatinian Arc, Argentina. Journal of Petrology 53, 761-800.

74. *Robinson, A.C.,* Ducea, M., Lapen, T.J., 2012. Detrital zircon and isotopic constraints on the crustal architecture and tectonic evolution of the northeastern Pamir. Tectonics 31, doi:10.1029/2011TC003013.

75. *Pearson, D.M.,* Kapp, P., Reiners, P.W., Gehrels, G.E., Ducea, M.N., Pullen, A., Otamendi, J.E., Alonso, R.N., 2012. Major Miocene exhumation by fault-propagation folding within a metamorphosed, early Paleozoic thrust belt: Northwestern Argentina. Tectonics 31, doi:10.1029/2011TC003043.

76. *Conroy, J.L.,* Overpeck, J.T., Cole, J.E., Liu, K.-B., Wang, L., Ducea, M.N., 2013. Dust and temperature influences on glaciofluvial sediment deposition in southwestern Tibet during the last millennium. Global and Planetary Change 107, 132-144.

77. Ducea, M.N., *Seclaman, A.C., Murray, K.E.,* Jianu, D., Schoenbohm, L.M., 2013. Mantle-drip magmatism beneath the Altiplano-Puna plateau, central Andes. Geology 41, 915-918.

78. *Kidder, S.B.,* Herman, F., Saleeby, J., Avouac, J.-P., Ducea, M.N., Chapman, A., 2013. Shear heating not a cause of inverted metamorphism. Geology 41, 899-902.

79. McQuarrie, N., Long, S.P., Tobgay, T., Nesbit, J.N., Gehrels, G., Ducea, M.N., 2013. Documenting basin scale, geometry and provenance through detrital geochemical data: Lessons from the Neoproterozoic to Ordovician Lesser, Greater, and Tethyan Himalayan strata of Bhutan. Gondwana Research 23, 1491-1510.

80. *Pearson, D.M.,* Kapp, P., DeCelles, P.G., Reiners, P.W., Gehrels, G.E., Ducea, M.N., Pullen, A., 2013. Influence of pre-Andean crustal structure on Cenozoic thrust belt kinematics and shortening magnitude: Northwestern Argentina. Geosphere 9, 1766-1782.

81. *Rossel, P.,* Oliveros, V., Ducea, M.N., Charrier, R., Scaillet, S., Retamal, L., Figueroa, O., 2013. The Early Andean subduction system as an analog to island arcs: Evidence from across-arc geochemical variations in northern Chile. Lithos 179, 211-230.

82. Toljić, M., Matenco, L., Ducea, M.N., Stojadinović, U., Milivojević, J., Đerić, N., 2013. The evolution of a key segment in the Europe–Adria collision: The Fruška Gora of northern Serbia. Global and Planetary Change 103, 39-62.

83. Balintoni, I., *Balica, C.,* Ducea, M.N., Hann, H.-P., 2014. Peri-Gondwanan terranes in the Romanian Carpathians: A review of their spatial distribution, origin, provenance, and evolution. Geoscience Frontiers 5, 395-411.

84. *Chapman, A. D.,* Ducea, M. N., Kidder, S., and Petrescu, L., 2014, Geochemical constraints on the petrogenesis of the Salinian arc, central California: Implications for the origin of intermediate magmas: Lithos, v. 200, p. 126-141.

85. *Molofsky, L.J.,* Killick, D., Ducea, M.N., Macovei, M., Chesley, J.T., Ruiz, J., Thibodeau, A., Popescu, G.C., 2014. A novel approach to lead isotope provenance studies of tin and bronze: applications to South African, Botswanan and Romanian artifacts. Journal of Archaeological Science 50, 440-450.

86. Putirka, K.D., Canchola, J., Rash, J., Smith, O., Torrez, G., Paterson, S.R., Ducea, M.N., 2014. Pluton assembly and the genesis of granitic magmas: Insights from the GIC pluton in cross section, Sierra Nevada Batholith, California. American Mineralogist 99, 1284-1303.

87. *Rossel, P.,* Oliveros, V., Mescua, J., Tapia, F., Ducea, M.N., Calderón, S., Charrier, R., Hoffman, D., 2014. The Upper Jurassic volcanism of the Río Damas-Tordillo Formation (33-35.5 S): Insights on petrogenesis, chronology, provenance and tectonic implications. Andean Geology 41, 529-557.

88. *Zhang, L.-Y.*, Ducea, M.N., Ding, L., Pullen, A., Kapp, P., Hoffman, D., 2014. Southern Tibetan Oligocene–Miocene adakites: A record of Indian slab tearing. Lithos 210, 209-223.

89. *Zhang, L.-Y.*, Ding, L., Pullen, A., Xu, Q., Liu, D.-L., Cai, F.-L., Yue, Y.-H., Lai, Q.-Z., Shi, R.-D., Ducea, M.N., 2014. Age and geochemistry of western Hoh-Xil–Songpan-Ganzi granitoids, northern Tibet: Implications for the Mesozoic closure of the Paleo-Tethys Ocean. Lithos 190, 328-348.

90. *Chapman, J.B.,* Ducea, M.N., DeCelles, P.G., *Profeta, L.,* 2015. Tracking changes in crustal thickness during orogenic evolution with Sr/Y: An example from the North American Cordillera. Geology 43, 919-922.

91. *Chapman, A.D.,* Ducea, M.N., McQuarrie, N., Coble, M., Petrescu, L., Hoffman, D., 2015. Constraints on plateau architecture and assembly from deep crustal xenoliths, northern Altiplano (SE Peru). Geological Society of America Bulletin 127, 1777-1797.

92. Ducea, M.N., Paterson, S.R., DeCelles, P.G., 2015. High-volume magmatic events in subduction systems. Elements 11, 99-104.

93. Ducea, M.N., Saleeby, J.B., Bergantz, G., 2015. The architecture, chemistry, and evolution of continental magmatic arcs. Annual Review of Earth and Planetary Sciences 43, 299-331.

94. Gelder, I.E., Matenco, L., Willingshofer, E., Tomljenović, B., Andriessen, P.A.M., Ducea, M.N., Beniest, A., Gruić, A., 2015. The tectonic evolution of a critical segment of the Dinarides-Alps connection: Kinematic and geochronological inferences from the Medvednica Mountains, NE Croatia. Tectonics 34, 1952-1978.

95. *Ibanez-Mejia, M.,* Pullen, A., Arenstein, J., Gehrels, G.E., Valley, J., Ducea, M.N., Mora, A.R., Pecha, M., Ruiz, J., 2015. Unraveling crustal growth and reworking processes in complex zircons from orogenic lower-crust: The Proterozoic Putumayo Orogen of Amazonia. Precambrian Research 267, 285-310.

96. Paterson, S.R., Ducea, M.N., 2015. Arc magmatic tempos: gathering the evidence. Elements 11, 91-98.

97. *Profeta, L.,* Ducea, M.N., Chapman, J.B., Paterson, S.R., Gonzales, S.M.H., Kirsch, M., Petrescu, L., DeCelles, P.G., 2015. Quantifying crustal thickness over time in magmatic arcs. Scientific Reports 5, 17786, doi:10.1038/srep17786.

98. *Rossel, P.,* Oliveros, V., Ducea, M.N., Hernandez, L., 2015. Across and along arc geochemical variations in altered volcanic rocks: Evidence from mineral chemistry of Jurassic lavas in northern Chile, and tectonic implications. Lithos 239, 97-113.

99. Walker Jr, B.A., Bergantz, G.W., Otamendi, J.E., Ducea, M.N., Cristofolini, E.A., 2015. A MASH zone revealed: the mafic complex of the Sierra Valle Fértil. Journal of Petrology 56, 1863-1896.

100. *Chapman, A.D.,* Jacobson, C.E., Ernst, W.G., Grove, M., Dumitru, T., Hourigan, J., Ducea, M.N., 2016. Assembling the world's type shallow subduction complex: Detrital zircon geochronologic constraints on the origin of the Nacimiento block, central California Coast Ranges. Geosphere 12, 533-557.

101. *Chapman, J.B.,* Gehrels, G.E., Ducea, M.N., Giesler, N., Pullen, A., 2016. A new method for estimating parent rock trace element concentrations from zircon. Chemical Geology 439, 59-70.

102. *Chen, C.,* Liu, Y., Foley, S.F., Ducea, M.N., He, D., Hu, Z., Chen, W., Zong, K., 2016. Paleo-Asian oceanic slab under the North China craton revealed by carbonatites derived from subducted limestones. Geology 44, 1039-1042.

103. Creixell, C., Oliveros, V., Vásquez, P., Navarro, J., Vallejos, D., Valin, X., Godoy, E., Ducea, M.N., 2016. Geodynamics of Late Carboniferous–Early Permian forearc in north Chile (28° 30′–29° 30′ S). Journal of the Geological Society, doi:10.1144/jgs2016-010.

104. Ducea, M.N., 2016. Understanding continental subduction: A work in progress. Geology 44, 239-240.

105. Ducea, M.N., Negulescu, E., *Profeta, L.,* Săbău, G., Jianu, D., Petrescu, L., Hoffman, D., 2016. Evolution of the Sibișel Shear Zone (South Carpathians): A study of its type locality near Răşinari (Romania) and tectonic implications, Tectonics 35, 2131-2157, doi:10.1002/2016TC004193.

106. Ducea, M.N., Roban, R.D., 2016. Role Played by Strike-Slip Structures in the Development of Highly Curved Orogens: The Transcarpathian Fault System, South Carpathians. The Journal of Geology 124, 519-527.

107. *Grădinaru, M.,* Lazar, I., Bucur, I.I., Grădinaru, E., Săsăran, E., Ducea, M.N., Andrăşanu, A., 2016. The Valanginian history of the eastern part of the Getic Carbonate Platform (Southern Carpathians, Romania): Evidence for emergence and drowning of the platform. Cretaceous Research 66, 11-42.

108. *Stoica, A.M.,* Ducea, M.N., Roban, R.D., Jianu, D., 2016. Origin and evolution of the South Carpathians basement (Romania): a zircon and monazite geochronologic study of its Alpine sedimentary cover. International Geology Review 58, 510-524.

109. *Chapman, J.B*., Ducea, M.N., Kapp, P., Gehrels, G.E., DeCelles, P.G., 2017. Spatial and temporal radiogenic isotopic trends of magmatism in Cordilleran orogens. Gondwana Research 48, 189-204.

110. *Chen, C.,* Liu, Y., Foley, S.F., Ducea, M.N., Geng, X., Zhang, W., Xu, R., Hu, Z., Zhou, L., Wang, Z., 2017. Carbonated sediment recycling and its contribution to lithospheric refertilization under the northern North China Craton. Chemical Geology 466, 641-653.

111. Coloma, F., Valin, X., Oliveros, V., Vásquez, P., Creixell, C., Salazar, E., Ducea, M.N., 2017. Geoquímica de rocas ígneas Permo-Triásicas del norte de Chile (28°-30° 15 S): Implicancias en la dinámica del margen pre-Andino. Andean Geology 44, 147-178.

112. *Delph, J.R., Ward, K.M.,* Zandt, G., Ducea, M.N., Beck, S.L., 2017. Imaging a magma plumbing system from MASH zone to magma reservoir. Earth and Planetary Science Letters 457, 313-324.

113. Ducea, M.N., Bergantz, G.W., Crowley, J.L., Otamendi, J., 2017. Ultrafast magmatic buildup and diversification to produce continental crust during subduction. Geology 45, 235-238.

114. Erak, D., Matenco, L., Toljić, M., Stojadinović, U., Andriessen, P.A.M., Willingshofer, E., Ducea, M.N., 2017. From nappe stacking to extensional detachments at the contact between the Carpathians and Dinarides–The Jastrebac Mountains of Central Serbia. Tectonophysics 710, 162-183.

115. Garzione, C.N., McQuarrie, N., Perez, N.D., Ehlers, T.A., Beck, S.L., Kar, N., Eichelberger, N., Chapman, A.D., Ward, K.M., Ducea, M.N., 2017. Tectonic evolution of the Central Andean plateau and implications for the growth of plateaus. Annual Review of Earth and Planetary Sciences 45, 529-559.

116. *Hu, F.,* Ducea, M.N., Liu, S., Chapman, J.B., 2017. Quantifying crustal thickness in continental collisional belts: global perspective and a geologic application. Scientific reports 7, 7058, doi:10.1038/s41598-017-07849-7.

117. *Hu, F.,* Liu, S., Ducea, M.N., Zhang, W., Deng, Z., 2017. The geochemical evolution of the granitoid rocks in the South Qinling Belt: Insights from the Dongjiangkou and Zhashui intrusions, central China. Lithos 278, 195-214.

118. Otamendi, J.E., Ducea, M.N., Cristofolini, E.A., Tibaldi, A.M., Camilletti, G.C., Bergantz, G.W., 2017. U-Pb ages and Hf isotope compositions of zircons in plutonic rocks from the central Famatinian arc, Argentina. Journal of South American Earth Sciences 76, 412-426.

119. *Pearson, D.M.,* MacLeod, D.R., Ducea, M.N., Gehrels, G.E., Patchett, P.J., 2017. Sediment underthrusting within a continental magmatic arc: Coast Mountains batholith, British Columbia. Tectonics 36, 2022-2043.

120. Stojadinovic, U., Matenco, L., Andriessen, P., Toljić, M., Rundić, L., Ducea, M.N., 2017. Structure and provenance of Late Cretaceous–Miocene sediments located near the NE Dinarides margin: Inferences from kinematics of orogenic building and subsequent extensional collapse. Tectonophysics 710, 184-204.

121. *Ward, K.M., Delph, J.R.,* Zandt, G., Beck, S.L., Ducea, M.N., 2017. Magmatic evolution of a Cordilleran flare-up and its role in the creation of silicic crust. Nature Scientific Reports 7, 9047, doi:10.1038/s41598-017-09015-5.

122. *Worthington, J.R.,* Kapp, P., Minaev, V., Chapman, J.B., Mazdab, F.K., Ducea, M.N., Oimahmadov, I., Gadoev, M., 2017. Birth, life, and demise of the Andean–syn-collisional Gissar arc: Late Paleozoic tectono-magmatic-metamorphic evolution of the southwestern Tian Shan, Tajikistan. Tectonics 36, 1861-1912.

123. Wu, D., Liu, Y., Chen, C., Xu, R., Ducea, M.N., Hu, Z., Zong, K., 2017. In-situ trace element and Sr isotopic compositions of mantle xenoliths constrain two-stage metasomatism beneath the northern North China Craton. Lithos 288, 338-351.

124. *Chapman, J.B.,* Dafov, M.N., Gehrels, G., Ducea, M.N., Valley, J.W., Ishida, A., 2018. Lithospheric architecture and tectonic evolution of the southwestern US Cordillera: Constraints from zircon Hf and O isotopic data. Geological Society of America Bulletin, doi:10.1130/B31937.1.

125. *Chapman, J.B.,* Scoggin, S.H., Kapp, P., Carrapa, B., Ducea, M.N., Worthington, J., Oimahmadov, I., Gadoev, M., 2018. Mesozoic to Cenozoic magmatic history of the Pamir. Earth and Planetary Science Letters 482, 181-192.

126. *Chen, C.,* Liu, Y., Feng, L., Foley, S.F., Zhou, L., Ducea, M.N., Hu, Z., 2018. Calcium isotope evidence for subduction-enriched lithospheric mantle under the northern North China Craton. Geochimica et Cosmochimica Acta 238, 55-67.

127. Ducea, M.N., *Chapman, A.D.,* 2018, Sub-magmatic arc underplating by trench and forearc materials in shallow subduction systems; A geologic perspective and implications, Earth Science Reviews, 185, 763-779, doi.org/10.1016/j.earscirev.2018.08.001

128. Ducea, M.N., Giosan, L., Carter, A., Balica, C., *Stoica, A.M.,* Roban, R.D., Balintoni, I., Filip, F., Petrescu, L., 2018, U-Pb detrital zircon geochronology of the lower Danube and its tributaries; implications for the geology of the Carpathians, Geochemistry, Geophysica, Geosystems, 19, 3208-3223.

129. *Hu, F.,* Liu, S., Ducea, M.N., Zhang, W., Chapman, J.B., Fu, J., Wang, M., 2018. Interaction among magmas from various sources and crustal melting processes during continental collision: insights from the Huayang intrusive complex of the South Qinling Belt, China. Journal of Petrology 1,35, 435-455.

130. Quandt, D., Trumbull, R.B., Altenberger, U., Cardona, A., Romer, R.L., Bayona, G., Ducea, M., Valencia, V., Vásquez, M., Cortes, E., 2018. The geochemistry and geochronology of Early Jurassic igneous rocks from the Sierra Nevada de Santa Marta, NW Colombia, and tectono-magmatic implications. Journal of South American Earth Sciences 86, 216-230.

131. Quinn, D.P., Saleeby, J., Ducea, M., Luffi, P., Asimow, P., 2018. Late-Cretaceous construction of the mantle lithosphere beneath the central California coast revealed by Crystal Knob xenoliths. Geochemistry, Geophysics, Geosystems, doi:10.1029/2017GC007260.

132. *Scott, E.M*., Allen, M.B., Macpherson, C.G., McCaffrey, K.J.W., Davidson, J.P., Saville, C., Ducea, M.N., 2018. Andean surface uplift constrained by radiogenic isotopes of arc lavas. Nature Communications 9, 969, doi:10.1038/s41467-018-03173-4.

133. Yu K., Liu Y, Ducea, M.N., 2018. Magma Recharge and Reactive Bulk Assimilation in Enclave-Bearing Granitoids, Tonglu, South China. Journal of Petrology, doi:10.1093/petrology/egy1044.

134. *Cecil, M.R.,* Ferrer M.A., N R. Riggs, K Marsaglia, A Kylander-Clark, Ducea, M.N., Stone P., 2019, Early arc development recorded in Permian – Triassic plutons of the northern Mojave Desert region, California, Geological Society of America Bulletin, 131, no. 5/6, 749-765.

135. *Chapman, J.B.,* Ducea, M.N., 2019, The role of arc migration in Cordilleran orogenic cyclicity, Geology, 47, 627-631.

136. Zeng, Y-C, Xu , J.F., Ducea, M.N., Chen, J.L., Huang, F., and Zhang, L., 2019, Initial Rifting of the Lhasa Terrane from Gondwana: Insights From the Permian (~262 Ma) Amphibole-Rich Lithospheric Mantle-Derived Yawa Basanitic Intrusions in Southern Tibet. Journal of Geophysical Research: Solid Earth, 124, 2564–2581. https://doi.org/10.1029/201

137. Xiong, F., Hou, M., Cawood, P.A., Huang, Hu, Ducea, M. N. and Ni, S., 2019, Neoproterozoic I-type and highly fractionated A-type granites in the Yili Block, Central Asian Orogenic Belt: Petrogenesis and tectonic implication, Precambrian Research, 328, 235-249.

138. Xiong, F., Ma, C., Chen, B., Ducea, M.N., Hou, M. and Ni, S., 2019. Intermediate-mafic dikes in the East Kunlun Orogen, Northern Tibetan Plateau: A window into paleo-arc magma feeding system, Lithos, 340, 152-165.

139. *Balica,C.,* M.N. Ducea G.E. Gehrels, J. Kirk, R.D. Roban, P. Luffi J.B. Chapman, A. Triantafyllou, J. Guo, A.M. Stoica, J. Ruiz, I. Balintoni, L. Profeta, D. Hoffman, L. Petrescu, 2020, A zircon petrochronologic view on granitoids and continental evolution, Earth and Planetary Science Letters, 531, paper 11605 https://doi.org/10.1016/j.epsl.2019.116005.

140. *Chapman AD,* Rautela, O, Shields, J., Ducea, MN, Saleeby, J., 2020, Fate of the lower lithosphere during shallow-angle subduction: The Laramide example, GSA Today, 30, 4-10. https://doi.org/10.1130/GSATG412A.1

141. Ducea, M.N., Stoica, A., *Barla, A.,* Panaiotu, C, Petrescu, L., 2020, Temporal Evolution of the Persani Volcanic Field, Eastern Transylvanian Basin (Romania); Implications for Convective Removal/Slab Rollback of Lithosphere Beneath the SE Carpathians, Tectonics, in press.

142. Ducea, M.N., *Triantafyllou, A., Krmarcic, J*., 2020, New timing and depth constraints for the Catalina Metamorphic Core complex, Southeast Arizona, Tectonics, in press, March 18.

143. *He, D.,* Liu, Y., Chen, C., Foley, S., Ducea, M.N., 2020, Oxidization of the mantle caused by recycling of sedimentary carbonates may contribute to the formation of iron-rich mantle melts, Science Bulletin, https://doi.org/10.1016/j.scib.2020.01.003.

144. *Grădinaru, M.,* Lazăr, I., Ducea, M.N., and Petrescu, *2020,* Microaerophilic Fe-oxidizing micro-organisms in Middle Jurassic ferruginous stromatolites and the paleoenvironmental context of their formation (Southern Carpathians, Romania) Geobiology, *1–28. DOI: 10.1111/gbi.12376*.

145. Roban, R.D., Ducea, M.N., Mațenco, L., Panaiotu, G.C., *Profeta, L.,* Krézsek, C., Melinte-Dobrinescu, M.C., Anastasiu, N., Dimofte, D., Apotrosoaei, V., Francovschi, I., 2020, Lower Cretaceous provenance and sedimentary model of the Eastern Carpathians: Inferences for the evolution of the subducted oceanic domain and its European passive continental margin: Tectonics, in press.

146. Oliveros, V., Vásquez P., Creixell C., Lucassen F., Ducea, M.N., Ciocca , Javiera I., González, Mauricio Espinoza , Salazar, E., Coloma , F., Kasemann, S.A., 2020, Lithospheric evolution of the Pre- and Early Andean convergent margin, Chile. Gondwana Research 80, 202–227.

147. *Rossel, P.,* Echaurren, A., Ducea M.N., Maldonado, P., Llanos, K., 2020, Jurassic arc volcanism in southern central Chile (~35-39ºS): New constrains on the early evolution of Andean magmatism: Lithos, in press.

148. *Triantafyllou, A.,* Berger, J., Baele, JM, Mattielli, N., Ducea, MN, Sterckx, S., Samson, S., Hodel, F., Ennih, N., 2020. Episodic magmatism during the growth of a Neoproterozoic oceanic arc (Anti-Atlas, Morocco), Precambrian Research, 339, https://doi.org/10.1016/j.precamres.2020.105610

149. Zhang, J-.B., Liu, Y-.S., Ducea, M.N., Xu, R., 2020, Archean, highly unradiogenic lead in shallow cratonic mantle: Geology, https://doi.org/10.1130/G47064.1.

150. Salazar, E.; Vásquez, P.; Vallejos, D.; Creixell, C.; Oliveros, V.; Ducea, M. 2020, Stratigraphic and provenance analysis of Triassic rock units between 28-29°S, northern Chile: implications on the tectonic and paleogeographic evolution of the southwestern margin of Gondwana, Andean Geology 47 (2): doi:http://dx.doi.org/10.5027/andgeoV47n2-3118

151. Francovschi, I., Gradinaru, E., Roban R.D., Ducea, M.N., Ciobotaru, V., Shumlyansky, V., 2020, Rare earth element (REE) enrichment of the late Ediacaran Kalyus Beds (East European Platform) through diagenetic uptake, Geochemistry, https://doi.org/10.1016/j.chemer. 2020.125612

Reviewed by Mihai Ducea, on April 21, 2020- Rare earth elements tracing crustal evolution through time: a detrital zircon study - NSF-Tectonics; $ 230,991, 07/01/17-6/30/20.

- Constraints on Plateau Architecture and Assembly From Deep Crustal Xenoliths, Northern Altiplano (Southern Peru), Program: NSF Petrology-Geochemistry, $ 154, 000, 07/01/15-6/30/17.

- Crustal Overturn in Continental Margin Arcs During Magmatic Surges NSF Tectonics, $ 297, 752, 06/01/2011-5/31/2014)

- Collaborative Research: The suturing process: Insight from the India-Asia collision zone NSF Continental Dynamics, University of Arizona, $1,958,673, 04/01/11 – 03/30/15 (CO-PI)

- In Pursuit of missing Andean Lithosphere: constraining Late Cenozoic crust-mantle process in the Puna Plateau, central Andes NSF Tectonics, $368,796, 9/1/09 – 8/31/12

- Collaborative Research: CAUGHT: Central Andean Uplift and the Geodynamics of High ‘ Topography NSF Continental Dynamics, $1,935,391, 6/1/09 – 5/31/13 (CO-PI)

- Collaborative Research: Lithospheric removal: The Sierra Nevada as the prototype of a fundamental process in mountain building NSF Continental Dynamics, $194,999, 6/1/06 –5/31/10

- Facility Support: Completing the Western North American Volcanic and Intrusive Rock Database (NAVDAT) NSF Instrumentation-Facilities, Facilities support, $ 198,261. 9/1/06-8/31/08

- Collaborative Research: BATHOLITHS: Generation and evolution of crust in continental magmatic arcs; National Science Foundation (Continental Dynamics Program), $3,303,072, 1/04-1/09

- Igniting Continental Arcs; A Petrologic Study of Peridotites And Mafic Rocks From The Coast Ridge Belt, Santa Lucia Mountains (California), National Science Foundation (Petrology-Geochemistry Program), $221,700, 01/2003-12/2005

- Testing the degree of correspondence between surface tectonic features and upper mantle structure and composition by study of volcanic-hosted xenoliths in the southwestern Cordillera National Science Foundation (Tectonics Program), $225,000, 01/ 2001-12/2002

- Sm-Nd thermochronology of garnets in metamorphic rocks: A new method and tectonic application National Science Foundation (Petrology Program), $ 59,717, 01/2001-12/2002

- Collaborative Research: Laboratory and field studies linking electrical anisotropy and deformation in the mantle National Science Foundation (Geophysics Program), $126,145, 9,/2000-8/2001

- K-Ca Geochronology; New Analytical Developments Using Multicollector ICP-MS And Geologic Applications, American Chemical Society, Petroleum Research Fund, $135,000, 9/2006- 8/2009

- In-Situ U-Pb Age Determinations Using Multiple-Collector ICP Mass Spectrometry: Further Technique Developments and a Tectonic Application, American Chemical Society, Petroleum Research Fund, $135,000, 9/2002-8/2004

In Romania, Federal Funding (UEFISCDI):

-CUTE New Methods for Tracking Regional and Global Crustal Changes Using the Geochemical Record of Magmatic Rocks and Their Derivative Sediments **,** UEFISCDI, PCCF, 8,500,000 RON (aprox 2, 000,000 USD), 11/18-11/22.

- DRIPS - Geochemical Tests Of Lithospheric Delamination With Applications To Convergent Margin Tectonics, UEFISCDI, Proiect PCCE, 850,000 RON (aprox 200,000 USD), 6/17-12/19.

Representative industry contracts:

Isotopic techniques constrain the evolution of oil genesis in carbonate reservoirs, Chevron Energy Technology, (2010-2016)

Isotope techniques for cocoa source tracing: Mars Chocolate Company (2015-2018)

OMV-Petrom (2013-2014), The origin of Carpathian terranes.