**Nikki M. Seymour**

Postdoctoral Fellow

Department of Geological Sciences, Stanford University

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**Education**

2020 Ph.D. Colorado State University, Warner College of Natural Resources

*Magmatism, deformation, and mineralization along the intra-arc Atacama fault system, northern Chile*

Advisor: Dr. John S. Singleton

2015 M.S. University of Texas at Austin, Jackson School of Geosciences *Thermal Evolution of Continental Rifting in Corsica (France)*

Advisor: Dr. Daniel F. Stockli

2009 B.S. University of Texas at Austin, McCombs School of Business

**Professional Experience**

2020–2022 NSF Postdoctoral Fellow, Stanford/UC Santa Cruz

 Advisors: Drs. Marty Grove & Jeremy Hourigan

Summer 2020 Instructor, GeoFORCE 10th Grade Academy

2015–2020 Graduate Research/Teaching Assistant, CSU

 *Fall 2019 –* Instructor, GEOL447: Mineral Deposits

 *Spring 2018 –* Developed Policies, Procedures, & Manual for Field Camp

 *Fall 2017 –* Co-Instructor, GEOL401: Geology of the Rocky Mtn Region

2013–2015 Graduate Teaching/Research Assistant, LA-ICP-MS lab, UT-Austin

2012–2013 Undergraduate Research Assistant, UT-Austin

 Advisors: Dr. Elizabeth Cassel & Dr. Jung-Fu Lin

 *Aug, Oct 2012* -- Mineral physics experiments at Advanced Photon Source, Argonne National Laboratory

**Awards & Fellowships**

2020–2022 National Science Foundation Postdoctoral Fellowship

2019–2020 Warner College of Natural Resources Graduate Student Success Scholarship

2019–2020 Roger & LuAnn Steininger Graduate Fellowship

2019 CSU Graduate Student Council October Researcher of the Month

2019 Outstanding Service to the Geosciences Department Award

2019 Association for Women Geoscientists Outstanding Student Award

2018 CSU Petrography Contest – 1st Place, Graduate Division

2018–2019 Larry Kent Burns Memorial Scholarship

2018 CSU Geoscience Advisory Council Best Poster Award

2018 CSU Petrography Contest – 2nd Place, Graduate Division

2017–2018 McCallum Mineralogy & Petrology Graduate Scholarship

2017–2018 CSU Vice President for Research Fellowship

2017 CSU Geoscience Advisory Council Best Poster Award

2017 Warner College of Natural Resources Top Scholar

2016–2017 Department of Geosciences Outstanding TA

2016–2017 Roger & LuAnn Steininger Graduate Fellowship

2016 Warner College of Natural Resources Top Scholar

2016 Geological Society of America MGPV Division Award

2015–2016 Edward Warner Research Assistantship

2015 Warner College of Natural Resources Top Scholar

2015 Folk/McBride Petrography Award – 2nd Place, Graduate Division

2014 Folk/McBride Petrography Award – 2nd Place, Graduate Division

2013 C B. & W. E. Nelson Field Camp Experience Scholarship

2013 C. E. Yager Undergraduate Field Scholarship



**Publications (‡ indicates undergraduate mentee)**

2020 **Seymour, N.M.,** Singleton, J.S., Mavor, S.P., Gomila, R., Stockli, D.F., Heuser, G., and Arancibia, G., *The relationship between arc magmatism and deformation along the intra-arc strike-slip Atacama fault system, northern Chile*, Tectonics, doi: 2019TC005702.

2020 Mavor, S.P., Singleton, J.S., Gomila, R., Heuser, G., **Seymour, N.M.,** Williams, S.A., Arancibia, G., Johnston, S., Kylander-Clark, A., and Stockli, D.F., *Timing, kinematics, and displacement of the Taltal fault system, northern Chile: Implications for the Cretaceous tectonic evolution of the Andean margin,* Tectonics, doi: 2019TC005832.

2020 Ruthven, R.C., Singleton, J.S., **Seymour, N.M.,** Gomila, R., Arancibia, G., Magloughlin, J.F., Ridley, J.R., and Stockli, D.F., *The geometry, kinematics, and timing of deformation along the southern segment of the Paposo fault zone, Atacama fault system, northern Chile*, Journal of South American Earth Sciences, doi:10.1016/j.jsames.2019.102355.

2019 Thacker, J.O., Karlstrom, K.E., Crossey, L.C., Crow, R.S., Cassidy, C.E., Beard, L.S., Singleton, J.S., Strickland, E.D., **Seymour, N.M.,** and ‡Wyatt, M.R., *Post–12 Ma deformation in the lower Colorado River corridor, southwestern USA: Implications for diffuse transtension and the Bouse Formation,* Geosphere, https://doi.org/10.1130/GES02104.1.

2019 Singleton, J.S., **Seymour, N.M.,** Reynolds, S.J., Vomocil, T., and Wong, M.S., *Distributed Neogene faulting across the western to central Arizona metamorphic core complex belt: synextensional constriction and superposition of the Pacific-North America plate boundary on the southern Basin and Range,* Geosphere, p. 1409-1435, doi:10.1130/GES02036.1.

2019 Singleton, J.S., Mavor, S.P., **Seymour, N.M.,** Williams, S.A., Patton, A.I., Ruthven, R.C., Johnson, E.P., and Prior, M.G., *Laramide shortening and the influence of Precambrian basement on uplift of the Black Hills, South Dakota and Wyoming,* Rocky Mountain Geology, 54(1), p. 1-17.

2018 **Seymour, N.M.,** Strickland, E.D., Singleton, J.S., Stockli, D.F., and Wong, M.S., *Laramide Subduction and Metamorphism of the Orocopia Schist, northern Plomosa Mountains, west-central Arizona: Insights from Zircon U-Pb Geochronology,* Geology, doi:10.1130/G45059.1.

2017 Strickland, E.D., Singleton, J.S., Griffin, A.T.B., and **Seymour, N.M.,** *Geologic Map of the Northern Plomosa Mountains Metamorphic Core Complex, Arizona*, Arizona Geological Survey Contributed Map CM-17-A, 1 map sheet, 1:10,000 map scale.

2016 **Seymour, N.M.,** Stockli, D.F., Beltrando, M., and Smye, A.J., *Tracing the Thermal Evolution of the Corsican lower crust during Tethyan rifting,* Tectonics, 35(10), p. 2439-2466.

2016 Yang, J., Lin, J.F., Jacobsen, S.D., **Seymour, N.M.,** Tkachev, S.N., and Prakapenka, V.B., *Elasticity of ferropericlase and seismic heterogeneity in the Earth’s lower mantle,* Journal of Geophysical Research: Solid Earth, 121(12), p. 8488-8500.

**Pending Publications (‡ indicates undergraduate mentee)**

 **Seymour, N.M.,** Singleton, J.S., Gomila, R., Mavor, S.P., Heuser, G., Stockli, D.F., and Arancibia, G., *Magnitude and timing of Early Cretaceous slip along the Atacama Fault System, northern Chile,* Journal of the Geological Society, submitted 7/20/2020.

 **Seymour, N.M.,** Singleton, J.S., Gomila, R., Ridley, J.R., Stein, H., Stockli, D.F., and Arancibia, G., *Skarn mineralization along a Cretaceous transpressional shear zone, Copiapó, Chile: Implications for Mineralization in the Chilean Iron Belt*, Economic Geology, in preparation.

 Wong, M.S., Singleton, J.S., **Seymour, N.M.,** Gans, P.B., and Wrobel, A., *Late Cretaceous-early Paleogene extensional origin of the Harcuvar and Buckskin-Rawhide metamorphic core complexes, west Arizona*, Tectonics, in preparation.

**Abstracts (\*oral,** † **poster for first author; ‡ indicates undergraduate mentee)**

*2020 Singleton, J.S.,* ***Seymour, N.M.,*** *Ruthven, R.C., Mavor, S.P., Gomila, R., Heuser, G., and Arancibia, G.: Rheological Behavior of Intra-Arc Strike-Slip Faults: Insights from the Atacama Fault System in Northern Chile, Geological Society of America Cordilleran Section Meeting, Pasadena, CA.*

2019 \***Seymour, N.M.,** Singleton, J.S., Gomila, R., Heuser, G., Mavor, S.P., Arancibia, G., and Stockli, D.F.: Structural Evolution of the Intra-Arc Atacama Fault System During Oblique Convergence, Geological Society of America Annual Meeting, Phoenix, AZ.

2019 †**Seymour, N.M.,** Singleton, J.S., Gomila, R., Arancibia, G., Ridley, J.R., Gevedon, M.L., Seman, S.M., and Stockli, D.F.: Multi-Phase Skarn Mineralization Along a Transpressional Shear Zone, Copiapó, Chile, Geological Society of America Annual Meeting, Phoenix, AZ.

2019 ‡Hernandez, M.A., **Seymour, N.M.,** Singleton, J.S., and Stockli, D.F.: U-Pb Detrital Zircon Geochronology of Paleozoic to Mesozoic Strata in the Coastal Cordillera, Northern Chile, Geological Society of America Annual Meeting, Phoenix, AZ.

2019 Prior, M.G., **Seymour, N.M.,** Singleton, J.S., ‡Marshall, K.N., and ‡Weld, S.E.: High Radiation Damage Apatite and Zircon (U-Th)/He Data and Constraints on the Low-Temperature Thermal History of the Black Hills Uplift, South Dakota, Geological Society of America Annual Meeting, Phoenix, AZ.

2019 Singleton, J.S., Beard, L.S., and **Seymour, N.M.**: Miocene Dextral Transtension and Synextensional Constriction Driven by Oblique Divergence Across the Western to Central Arizona Metamorphic Core Complex Belt, Geological Society of America Annual Meeting, Phoenix, AZ.

2019 Magloughlin, J.F., **Seymour, N.M.,** and Zaggle, R.H.: U-Pb dating of the Wenatchee Ridge Orthogneiss and related rocks with implications for the tectonic history of the Nason Terrane, Geological Society of America Cordilleran Section Meeting, Portland, OR.

2018 †**Seymour, N.M.,** Singleton, J.S., Gomila, R., and Stockli, D.F.: Effects of Early Cretaceous Plutonism along the Atacama Fault System, northern Chile: The Relationship between Magmatism and Deformation: American Geophysical Union Fall Meeting, Washington, DC.

2018 Mavor, S.P., Singleton, J.S., **Seymour, N.M.,** Gomila, R., Heuser, G., Williams, S.A., and Arancibia, G.: Geologic Mapping of the Atacama and Taltal Fault Systems, Northern Chile: American Geophysical Union Fall Meeting, Washington, DC.

2018 Prior, M.G., ‡Marshall, K.N., ‡Weld, S.E., **Seymour, N.M.,** and Singleton, J.S.: Exhumation History of the Black Hills, South Dakota from Apatite (U-Th)/He Thermochronometry: Evidence for late Paleozoic Ancestral Rocky Mountains Exhumation?, Geological Society of America Joint Rocky Mountain/Cordilleran Section Meeting, Flagstaff, AZ.

2018 Mavor, S.P, Williams, S.A., **Seymour, N.M.,** Ruthven, R.C., Patton, A.I., Johnson, E.P., and Singleton, J.S.: Kinematics of Laramide Deformation and the Influence of Basement Fabrics in the Black Hills Uplift, South Dakota and Wyoming, Geological Society of America Joint Rocky Mountain/Cordilleran Section Meeting, Flagstaff, AZ.

2018 Strickland, E.D., Singleton, J.S., ‡Wyatt, M.R., and **Seymour, N.M.**: Post-middle Miocene transtension in the Plomosa Mountains and development of the La Posa Plain, west-central Arizona, Geological Society of America Joint Rocky Mountain/Cordilleran Section Meeting, Flagstaff, AZ.

2018 Singleton, J.S., Wong, M.S., Strickland, E.D., Prior, M.G., Wrobel, A., Pollard, B., Stockli, D.F., Gans, P., and **Seymour, N.M.**: Laramide magmatism and extensional exhumation recorded in Miocene metamorphic core complexes in west-central Arizona, Geological Society of America Joint Rocky Mountain/Cordilleran Section Meeting, Flagstaff, AZ.

2017 †**Seymour, N.M.,** Singleton, J.S., Gomila, R., Heuser, G., Strickland, E.D., Ruthven, R.C., Stockli, D.F., and Arancibia, G.: *Magnitude and timing of Early Cretaceous slip along the Atacama Fault System, northern Chile*: Geological Society of America Annual Meeting, Seattle, WA, Abstracts with Programs.

2017 †**Seymour, N.M.,** Strickland, E.D., Singleton, J.S., Stockli, D.F., and Wong, M.: *Subduction and metamorphism of the Orocopia Schist, northern Plomosa Mountains, west-central Arizona: Insights from zircon U-Pb geochronology*: Geological Society of America Annual Meeting, Seattle, WA, Abstracts with Programs.

2017 Ruthven, R.C., Singleton, J.S., **Seymour, N.M.,** Magloughlin, J.F., Gomila, R., Stockli, D.F., and Arancibia, G.: *New constraints on the geometry, kinematics, and timing of deformation along the southern segment of the Paposo fault zone, Atacama Fault System, northern Chile*: Geological Society of America Annual Meeting, Seattle, WA, Abstracts with Programs.

2017 ‡Wyatt, M.R., Singleton, J.S., **Seymour, N.M.**: *Evidence for dextral transtension in the southern Plomosa Mountains, west-central Arizona:* Geological Society of America Annual Meeting, Seattle, WA, Abstracts with Programs.

2016 †**Seymour, N.M.,** Wong, M., and Singleton, J.S.: *TitaniQ analyses of mylonites from metamorphic core complexes in west-central Arizona: Implications for two phases of extension in the lower Colorado River Extensional Corridor*: American Geophysical Union, San Francisco, CA.

2016 Strickland, E.D., Singleton, J.S., **Seymour, N.M.,** and Wong, M.: *Evidence for the Orocopia Schist in the footwall of the Plomosa Mountains metamorphic core complex, west-central Arizona*: Geological Society of America Annual Meeting, Denver, CO, Abstracts with Programs.

2016 Stockli, L.D., Stockli, D.F., Smye, A.J., **Seymour, N.M.,** and Boyd, P.: Thermal history recovery from high-resolution laser-ablation ICP-MS U-Pb and trace element depth profiling, 15th International Conference on Thermochronology, Maresias, Brazil.

2016 Singleton, J.S., **Seymour, N.M.,** and Reynolds, S.J.: *Distributed Neogene dextral faulting across Arizona’s metamorphic core complexes: Superposition of the Pacific-North American plate boundary on the southern Basin and Range*: Geological Society of America Cordilleran Section Meeting, Ontario, CA.

2015 \***Seymour, N.M.,** Stockli, D.F., Beltrando, Marco, and Smye, A.J.: *Accessory Mineral Depth-Profiling Applied to the Corsican Lower Crust: A Continuous Thermal History of Mesozoic Continental Rifting*: American Geophysical Union, San Francisco, CA.

2015 †**Seymour, N.M.,** Stockli, D.F., Smye, A.J., and Beltrando, M.: *Thermal Evolution of Continental Rifting in Corsica (France)*: Goldschmidt, Prague, Czech Republic.

2015 \***Seymour, N.M.,** Stockli, D.F., and Smye, A.J.: *A Continuous Thermal History of Corsica Derived from Accessory Mineral Depth- Profiling*: North American Laser Ablation Workshop, Austin, TX.

2014 †**Seymour, N.M.,** Stockli, D.F., Beltrando, Marco, and Smye, A.J.: *Thermal Evolution of Continental Rifting in Corsica (France):* American Geophysical Union, San Francisco, CA.

2013 †**Seymour, N.M.,** Cassel, E.J., and Stockli, D.F.: *Detrital zircon geochronology of Copper and Bull Run Basins, NV*: Geological Society of America Annual Meeting, Denver, CO, Abstracts with Programs, v.45, no. 7, p.604.

**Non-conference Presentations (\*oral,** † **poster)**

2020 **\**INVITED:*** Magmatism & deformation along the intra-arc Atacama fault system, northern Chile: University of Arizona Department of Geosciences Seminar

2020 **\**INVITED:*** Structural Evolution of the Intra-Arc Atacama Fault System during Oblique Convergence: Sacramento State University Department of Geology Seminar

2020 **\**INVITED:*** Structural Evolution of the Intra-Arc Atacama Fault System during Oblique Convergence: Sonoma State University Department of Geology Seminar

2020 **\**INVITED:*** Structural Evolution of the Intra-Arc Atacama Fault System during Oblique Convergence: San Diego State University Department of Geological Sciences Seminar

2019 **\**INVITED:*** Under the Arc and Through the Crust: Laramide subduction and metamorphism of the Orocopia Schist, northern Plomosa Mountains, west-central Arizona: University of Northern Colorado Geoscience & Women in STEM clubs, CSU-UNC Research Exchange Program

2019 **\***Structural evolution of the Atacama Fault System: Deformation in a magmatic arc during oblique convergence: University of Padova Department of Geoscience Seminar

2019 \*Skarn alteration of a transpressional shear zone, Copiapó, Chile: Colorado State University Graduate Student GeoSlam

2019 \*Structural evolution of the Atacama Fault System, northern Chile: Deformation in a magmatic arc during oblique convergence: UT Austin Jackson School of Geosciences Lithosphere and Deep Earth Seminar

2018 **\**INVITED****:* Subduction and Metamorphism of the Orocopia Schist, west-central Arizona: Insights from Zircon U-Pb Geochronology: The University of Hong Kong Department of Earth Sciences Seminar Programme

2018 \*Early Cretaceous Magnitude, Timing, and Rate of Slip along the Atacama Fault System, northern Chile: Colorado State University Graduate Student GeoSlam

2017 \*Applying analytical techniques to field-based studies: Colorado State University Graduate Student GeoSlam

2015 \*Thermal Evolution of Continental Rifting in Corsica (France): UT Austin Jackson School of Geosciences Petrology, Geochemistry, Structure & Tectonics Seminar

2015 †Apatite U-Pb Thermochronometry Applied to a Fossil Hyperextended Rift Margin in Corsica: Jackson School of Geosciences Annual Research Symposium.

2014 †Thermal Evolution of Continental Rifting in Corsica (France): Jackson School of Geosciences Annual Research Symposium.

**Grants**

2020–2022 National Science Foundation Postdoctoral Fellowship: Unraveling the Paleogene exhumation history of the Orocopia Schist in west-central Arizona **($174,000)**

2018*–*2019 SEG Hugh McKinstry Student Research Grant: Geochemical Analyses of Skarns in the Punta del Cobre belt, Copiapó Chile: Implications for IOCG Mineralization in the Chilean Iron Belt **($3,700)**

2018*–*2019 GSA Graduate Student Research Grant: Rheology and Peak Strength of the Atacama Fault System, northern Chile **($2,130)**

2016*–*2017 GSA Graduate Student Research Grant: Timing and Magnitude of Slip along the Atacama Fault System, northern Chile **($4,500)**

2014*–*2015 Jackson School of Geosciences Off-Campus Research Grants, Ronald K. DeFord Field Scholarship: Thermal Evolution of Continental Rifting in Corsica **($1,600)**

**Undergraduate Student Mentoring**

Micah Hernandez (2018-2019); Amanda Eddleman (2018); Kendall Marshall (2017-2018); Shannon Weld (2017-2018); Michael Wyatt (2017); Christine Frye (2017); Caroline Martin (2013-2014)

**Teaching Experience**

Summer 2020 GeoFORCE 10th Grade Virtual Academy: Learning to Read the Rocks (Instructor, 2 sessions)

Fall 2019 Mineral Deposits (Instructor)

Summer 2019 CSU Field Camp (TA; 1 week)

Spring 2019 Igneous & Metamorphic Petrology (Sole TA)

Summer 2016, 2017, 2018 CSU Field Camp (Head TA; 5 weeks/summer)

Fall 2017 Geology of the Rocky Mtn Region (Co-instructor)

Spring 2017 Structural Geology (Sole TA)

Fall 2016 Optical Mineralogy (Sole TA)

Summer 2014, 2015 UT-Austin Field Camp 660B (TA; 3 weeks/summer)

Spring 2015 Igneous & Metamorphic Petrology (TA)

Fall 2014 Structural Geology (Head TA)

**Field Work**

Calabria, Italy; Atacama Desert, northern Chile; Black Hills, SD/WY; Plomosa, Harquahala, White Tank, and South Mtns, AZ; Corsica, France; Bull Run and Copper Basins, NV

**Academic Field Trips**

Fall 2019 IAGD Accessible Field Trip: Geology of Petrified Forest NP, AZ

Spring 2019 CSU SEG Student Chapter: Carlin-Style Deposits of Nevada (*Organizer)*

Spring 2018 CSU SEG Student Chapter: Mineral Deposits of AZ & NM (*Organizer)*

Winter 2018 SEG Field Course: Copper-Silver-Gold Metallogeny of Northern Chile

Fall 2017 CSU SEG Student Chapter: Mineral Deposits of MT *(Organizer)*

Fall 2017 Friends of the Pleistocene: Geology of Owens Valley, CA

Fall 2017 Geology of the Rocky Mtn Region: Moab, UT (*Co-instructor)*

Spring 2017 CSU SEG Student Chapter: Mineral Deposits of CA, NV, & UT (*Organizer)*

Fall 2016 CSU/USGS: Orocopia Schist in Arizona *(Co-leader)*

Fall 2016 Geology of the Rocky Mtn Region: Black Hills, SD

Fall 2015 Arizona Geological Society: Northern Plomosa Mountains

Fall 2015 Geology of the Rocky Mtn Region: Yellowstone

Fall 2014 Structural Geology of Big Bend, TX

August 2014 Geology of a Caledonian Arc-Continent Collision, Ireland

Spring 2014 Geology of the Whipple Mountains, CA

Fall 2013 Structural Geology of the Llano Uplift, TX

Fall 2013 Geology of the Arbuckle and Ouachita Orogenies, OK

**Professional Activities**

2020 Participant, LabVIEW for Instrument Control, UC Santa Cruz

2017–2020 Seminar Organizer, CSU GeoSlam

2019 Participant, IAGD Accessible Field Trip, Petrified Forest NP

2019 Co-convener, GSA Session T53: “Present-Day and Ancient Flat-Slab Subduction in the Rock Record, Geophysical Images, and Geodynamic Models”

2019 Participant, CSU Creating Inclusive Excellence Program

2019 Judge, Colorado Science & Engineering Fair (High School)

2019 Volunteer and Student Mentor, NSF PROGRESS Workshop

2018–2019 Judge, CSU Undergraduate Research Fair

2018 Guest Instagrammer/Science Communication, American Geophysical Union

2017, 2018 Student Representative, Geosciences Congressional Visits (GSA, AGU)

2018 Participant, ComSciCon Rocky Mountain West

2018 Participant, Earth Educators Rendezvous: Preparing for an Academic Career

2014–2015 Seminar Organizer, UT Austin iPGST Hard Rock Seminar

2013 Student Organizer, 7th North American Mössbaurer Symposium

**Professional Memberships**

American Geophysical Union (2014 – Present)

American Association of Petroleum Geologists (2013 – Present)

American Institute of Professional Geologists (2013 – Present)

Association for Women Geoscientists (2016 – Present)

 Laramide Chapter Treasurer (2017 – 2018)

Geological Society of America (2012 – Present)

Geosciences Leadership Organization for Women (2012 – 2015)

 Graduate Student Liaison (2013 – 2014)

International Association for Geoscience Diversity (2019 – Present)

JSG Graduate Studies Executive Committee (2013 – 2015)

JSG Students Raising Students (2013 – 2014)

Mineralogical Society of America (2017 – 2019)

National Association of Geoscience Teachers (2018 – 2019)

Society of Economic Geologists (2016 – Present)

CSU Student Chapter President (2018 – 2019)

CSU Student Chapter Vice President (2017 – 2018)

CSU Student Chapter Treasurer (2016 – 2017)