CHRISTOPHER J. ROTHFUSS

Ph.D., Chemical Engineering

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EDUCATION

Ph.D. Chemical Engineering | *University of Washington, Seattle, WA (2002)*

Advisor: Prof. Eric M. Stuve

Dissertation: *The Influence of High Electric Fields on Water and Methanol Surface Electrochemistry*

Selected Honors:

- Chemical Engineering Class of 2002 Outstanding Teaching Assistant **2002**
- McCarthy Outstanding Teaching Assistant Award **2001**
- Pacific Northwest AVS Best Graduate Research Poster **2001**
- Graduate Research Assistantship **1999 - 2002**
- Graduate Recruitment Fellowship **1998**

M.S. Applied Physics | *University of Washington, Seattle, WA (2002)*

Advisor: Prof. Samuel C. Fain

M.S. Chemical Engineering | *University of Wyoming***,** *Laramie, WY* (*1996)*

Advisor: Prof. Chang-Yul Cha

Thesis: *Utilization of a Scrap Tire/Waste Oil Derived Carbonous Residue as an Asphalt Modifier*

B.A. International Studies | *University of Wyoming***,** *Laramie, WY* (*1994)*

Specialization in Political Science

Honors Graduate Thesis Topic: *Sustainable Development*

Selected Honors:

- Wyoming Debate Hall of Fame Selection **2017**
- University of Wyoming Debate Team Captain **1993 - 1994**
- Western States Speech and Communications Association Debate Champion **1993**
- University of Wyoming Most Outstanding Debater **1992 - 1993**
- Torbert Debate Scholarship **1991 - 1994**
- University of Wyoming Debate Team **1990 - 1994**
- University of Wyoming Honors Program **1990 - 1994**
- University of Wyoming Trustees' Superior Student Scholarship **1990 - 1994**

Continuing Studies

SLLF Emerging Leaders Program | *University of Virginia, Darden School of Business, Charlottesville, VA* **2011**

Advanced International Multilateral Negotiations | *U.S. Foreign Service Institute***,** *Arlington, VA* **2004**

Introduction to the Foreign Service | *U.S. Foreign Service Institute***,** *Arlington, VA* **2003**

EXPERIENCE

State Senator | *Wyoming State Legislature, Cheyenne, Wyoming (1/11 -)*
Senate Minority Leader | *Wyoming State Legislature, Cheyenne, Wyoming (1/13 - 1/25)*

In November 2010, I was elected to serve as Wyoming State Senator for Senate District 9 in Laramie, WY, as a member of the 61st Wyoming Legislature. I was further selected as *Senate Minority Leader* for the 62nd, 63rd, 64th, 65th, 66th and 67th Legislative Sessions. Of the bills I sponsored, 16 have become law, and so have 79 that I cosponsored.

As Senate Minority Leader, I coordinated caucus policy positions, led floor debate, and represented the minority caucus in negotiations with legislative leadership, the Governor, and executive branch agencies. In this role, I was directly involved in the passage of legislation and the development of Wyoming's biennial state budget exceeding $9 billion.

Chairman, Blockchain Task Force (2018 - 2019)
Chairman, Select Committee on Blockchain, Financial Technology & Digital Innovation Technology (2020 -)
As creator and co-Chair of the Wyoming Blockchain Task Force and its successor Select Committee, I have led Wyoming's transformation into a globally recognized leader in digital asset governance. Through these bodies, I helped guide the successful passage of more than 40 bills establishing clear legal frameworks for decentralized autonomous organizations, decentralized unincorporated nonprofit associations, digital asset custodial services, special purpose depository institutions, financial technology sandboxes, utility tokens, digital asset commercial law, and the Wyoming Stable Token Act. The DAO and DUNA laws were each the first of their kind. The Select Committee continues to refine and expand Wyoming's digital asset laws in response to technological change and evolving federal regulatory developments. In collaboration with stakeholders across state government, industry, and academia, the committee's work has supported first-of-their-kind initiatives such as Wyoming's state-backed stable token program and provided sustained legislative study and oversight of digital innovation policy.

Chairman, Taskforce on Digital Information Privacy (2014 - 16)
With the passage of 2014 Senate File 91, I created and chaired a seven-member taskforce of legislators and gubernatorial appointees charged with modernizing Wyoming's statutory framework for digital information privacy. The taskforce conducted a comprehensive review of state law and led to the passage of multiple bills addressing the collection, use, and protection of personally identifiable information, student data privacy, genetic information privacy, and law enforcement body-worn camera data. This work established Wyoming as an early leader among states in addressing digital privacy challenges through statute.

Ranking Member, Senate Education Committee (2011 -); Select Committee on School Finance Recalibration (2015, 2017, 2020, 2025); Select Committee on Statewide Education Accountability (2011 - 16); Select Committee on School Facilities (2011 -); Wyoming's Tomorrow Task Force (2019 - 2020)
For fifteen years, I have been deeply engaged in crafting Wyoming's education policy and budgets as a member of every education-related legislative committee assembled during that period. Key

accomplishments include helping design and refine the Wyoming Accountability in Education Act, participation in four statewide school finance model recalibrations culminating in the 2026 recalibration (SF 81), which I led through the select committee and both chambers and which became the first recalibration bill to pass in 15 years, adding about $114 million a year and raising model teacher salaries 20.7 percent, a significant role in school facilities funding totaling billions of dollars, co-sponsorship of the Wyoming Safe2Tell program, passage of Computer Science for All, statutory work supporting statewide reading literacy and early intervention efforts, and Wyoming's consistently above-average NAEP performance.

Ranking Member, Senate Minerals, Business and Economic Development Committee (2011 -); Subcommittee on Municipal Solid Waste (2012); Task Force on Nuclear Energy Production (2011 - 12); Select Committee on the Wyoming Value Added Energy and Industrial Plan (2014 - 16); Select Committee on Coal/Mineral Bankruptcies (2019 -)
As the longest continuously serving member of the Senate Minerals, Business and Economic Development Committee, I have focused on responsible mineral development, statewide economic diversification, and environmental protection. In each of the following I played a significant role: the ENDOW economic development initiative, NRC Agreement State authorization, Wyoming solid waste law including cease and transfer and remediation programs, creation of the Wyoming Energy Authority, the sage grouse impact mitigation credit program, revisions to oil and gas bonding, forced pooling, and unitization statutes, and coal reclamation bonding. I led the 2025 small operator oil and gas bonding pool (SF 20) and the 2025 carbon dioxide enhanced oil recovery incentive (SF 17), which aligns state policy with the federal 45Q tax credit.

Ranking Member, Management Council (2013 - 2024)
The Management Council serves as the governing board of directors for the Wyoming Legislature, with responsibility for the operation, administration, and strategic oversight of the legislative branch and the Legislative Service Office. During my service, I participated in setting legislative branch policy and priorities, directing and overseeing the Legislative Service Office's legal, research, fiscal, and administrative functions, approving interim committee structure and budgets, monitoring interim committee activity, conducting administrative rule review, and approving personnel actions and the operating budget for the legislative branch.

Ranking Member, Capitol Building Restoration Oversight Group (2014 - 2019)
I served on the Capitol Building Restoration Oversight Group for the full duration of the Capitol Square Project, a multi-year, approximately $300 million restoration and expansion of the Wyoming State Capitol complex. Comprised of the Governor, eight legislators, and, from 2017, the State Treasurer, the Oversight Group provided governance and fiduciary oversight for project scope, schedule, and budget, coordinating across branches of government to ensure accountability. The project was completed in 2019 within its authorized budget of about $300 million and in accordance with historic preservation and functional modernization goals.

Other Notable Committees:

- *Co-Chairman*, UW Housing Taskforce (2019)
- *Ranking Member,* Senate Rules and Procedures Committee (2013 -)
- Select Committee on Capital Financing & Investments (2017 - 18)
- Select Committee on Legislative Facilities, Technology and Process (2011 –)

Director of Internships, Entrepreneurial Initiatives, and Research Opportunities | *Honors College, University of Wyoming***,** *Laramie, Wyoming (7/22 –)*
Visiting Assistant Professor | *Honors College, University of Wyoming***,** *Laramie, Wyoming (12/16 – 7/22)*
Professional Academic Lecturer | *Honors Program, University of Wyoming***,** *Laramie, Wyoming (5/07 – 12/16)*
Adjunct Professor of International Studies | *University of Wyoming***,** *Laramie, Wyoming (5/07 – present)*

I have been an instructor with the University of Wyoming Honors College (formerly the Honors Program) since 2007. During this time, I have taught more than thirty Honors College courses, as well as undergraduate and graduate courses across Global and Area Studies and the College of Engineering. My teaching emphasizes experiential learning, interdisciplinary inquiry, and the application of technical, scientific, and policy concepts to real-world challenges. A detailed teaching record is provided in the Teaching Experience section below.

I currently serve as **Director of Internships, Research, and Entrepreneurship** for the Honors College, where I lead the development and coordination of high-impact experiential learning opportunities for Honors students. In this role, I work closely with students, faculty, and external partners to identify, design, and support mentored research and internship experiences that align with student goals and Honors learning outcomes. Since 2023, I have facilitated more than 120 paid research and internship placements for Honors students.

I served as **Director, University of Wyoming Summer High School Institute (HSI)** from 2016 to 2021. The Summer HSI is a competitive, three-week residential program that brings high-achieving rising high school juniors from across Wyoming to the UW campus for an immersive academic experience. The program combines rigorous honors-style coursework with residential life, leadership development, and cross-disciplinary engagement, and has been a significant pipeline for recruiting students into the Honors College and the University of Wyoming more broadly.

I chaired the **Honors College Steering Committee** (2016), leading the committee responsible for guiding the transition of the University of Wyoming Honors Program into the University of Wyoming Honors College and providing leadership in the development of the academic vision, governance structure, and institutional framework that established the Honors College as a distinct academic unit.

Service to the University includes serving as Chairman, Honors College Steering Committee (2016); member, College of Education Visioning Group (2018); member, UW Director of Forensics Hiring Committee (2019, 2025); member, Entrepreneurship Working Group (2019); member, Honors Major Committee (2021–2023); member, University Studies Program “V” Committee (2022–2023); and member, Honors College Concentration Course Review Committee (2024–present).

Advisor | *X, The Moonshot Factory, Mountain View, California (4/19 - 4/20)*

As an advisor to X, Google's sister company and an innovation engine within Alphabet, I worked to support Moonshots and advanced technology development through the X Ambassador program.

- Identified, evaluated and enabled potential challenge areas and technologies for innovation;
- Sourced new technologies and prospective partners to connect with program teams within X.

Chairman, Board of Directors | *Pilot Hill, Inc., Laramie, Wyoming (5/19 - 9/20)*
Chairman, Oversight Committee | *Pilot Hill Project, Laramie, Wyoming (10/17 - 9/20)*

Selected by the Albany County Board of Commissioners to serve as the founding Chairman of the Pilot Hill Project Oversight Committee. The mission of the Pilot Hill Project was to facilitate the public acquisition of nearly 5,500 acres of beautiful, rugged and undeveloped land east of Laramie to provide recreational opportunities, facilitate wildlife management and protect Casper aquifer drinking water.

- Led the development and implementation of a multi-year community strategy to raise $14.5M to acquire and manage ~5,500 acres of land on behalf of the citizens of Albany County, Wyoming;
- Organized Finance, Communications and Land Management subcommittees to engage community stakeholders and coordinate hundreds of community volunteers;
- Successfully secured a land exchange between the Pilot Hill land owners and the State of Wyoming for all land under consideration to place the land in public hands;
- Oversaw the raising of >$1M of grants and community donations to fund Pilot Hill, Inc. administration, operations and infrastructure;
- Organized Pilot Hill, Inc. as a non-profit corporation to oversee recreation and land management leases in cooperation with the State of Wyoming, Albany County and the Wyoming Department of Game and Fish;
- Wyoming Planning Association 2020 Planning Project of the Year.

Inventor | *Xinova, LLC, Seattle, Washington (10/10 - 8/21)*

Provided directed invention, innovation, technology evaluation and scoping services to Xinova, LLC and their prior incarnation, Intellectual Ventures' Invention Development Fund. Project work went beyond patents and included a malaria supply chain project with the Bill & Melinda Gates Foundation, hydrogen vehicle work for Hyundai, novel snack foods for PepsiCo, and advanced financial technologies.

- Invented solutions for clients resulting in 16 issued patents and 10+ patent pending applications;
- Recognized as an Intellectual Ventures / Xinova Platinum Inventor;
- Participated in directed invention sessions resulting in technical solutions and intellectual property for Fortune 50 clients; and
- Reviewed invention proposals by other inventors for novelty, obviousness and commercial potential.

Advanced Technology Consultant & President| *RARE Corporation***,** *Laramie, Wyoming (11/06 - 12/2023)*

Offer advanced and emerging technology consulting services and expertise to clients; develop internal projects.

- Provided business development and strategic planning services for technology companies;
- Evaluated novel technologies and intellectual property to assess plausibility, uniqueness and commercialization potential; and

Candidate for United States Senate | *Rothfuss for Senate, Wyoming (3/08 – 11/08)*

In 2008, I was the Democratic candidate in the Wyoming election for the United States Senate. After winning the primary and the Democratic nomination, I was defeated by Republican incumbent Senator Mike Enzi in the general election on November 4, 2008.

My campaign platform emphasized:

- Achieving sustainable energy independence through a comprehensive long term national energy plan, the establishment of a National Energy Board and an Energy Bond program (Op-Ed: "Bonds, Energy Bonds"), and a sensible Cap and Trade policy (Op-Ed: "Energy leadership, not just energy production");
- Reliance on sound science in the legislative process;
- A return to global diplomatic leadership and the withdrawal of our troops from Iraq; and
- Regaining the Constitutional rights and freedoms that have been eroded by the Executive Branch.

AAAS Science & Technology Diplomacy Fellow and Foreign Affairs Officer (GS-14) | *U.S. Department of State - Office of Space & Advanced Technology, Washington, DC (9/03 - 8/06)*

While working at the Department of State, I was responsible for providing expert scientific advice and analysis to aid in the development of U.S. foreign policy. My primary role was serving as the senior nanotechnology advisor for the State Department and the U.S. government lead on international nanotechnology issues. In this capacity, I represented U.S. interests in multilateral and bilateral meetings and negotiations, and coordinated U.S. foreign policy in cooperation with other federal agencies and the intelligence community on nanotechnology related issues. In addition, my portfolio included advanced technologies, energy, space and advanced technology export control and licensing, orbital debris mitigation, space nuclear power sources, object re-entry, remote sensing and the UN Committee on the Peaceful Uses of Outer Space (COPUOS). I represented my office and the Department on the following committees and working groups:

- NSTC Nanoscale Science, Engineering and Technology (NSET) Subcommittee
- *Chairman*, NSET Global Issues in Nanotechnology (GIN) Working Group

- *Chairman*, U.S. Department of State Nanotechnology Working Group
- NSET Nanotechnology Environmental and Health Implications (NEHI) Working Group
- Nano-Enabled Technologies Initiative (NETI) Technical Working Group
- Missile Technology Export Control (MTEC) Committee
- Remote Sensing Interagency Working Group (RSIWG)
- NOAA Informal Interagency Remote Sensing Working Group (NIIRSWG)
- International Inter-Agency Space Debris Coordination Committee (IADC)
- UN COPUOS Space Debris Working Group
- UN COPUOS Space Nuclear Power Sources Working Group

Select accomplishments:

- Negotiated and concluded UN Space Debris Mitigation Guidelines working within the UN COPUOS Scientific and Technical Subcommittee Space Debris Working Group.
- Founded the Global Issues in Nanotechnology (GIN) Working Group of the NSTC Nanoscale Science, Engineering, and Technology (NSET) Subcommittee and served as chairman to establish a venue for coordinating U.S. nanotechnology foreign policy.
- Spearheaded the creation of the Working Party on Nanotechnology within the Committee for Scientific and Technological Policy (CSTP) of the Organisation for Economic Co-Operation and Development (OECD) to coordinate and facilitate the cooperative global development of nanotechnology.

Senior Partner & co-Founder | *Synectix Group, Inc.***,** *Seattle, Washington (2/02 - 12/03)*

As a Senior Partner and co-Founder of Synectix Group, Inc., I was responsible for managing projects and expanding the corporate client base. Synectix Group, Inc. was a consultation and service corporation that brought together diverse expertise in computation, science and engineering to provide innovative solutions for their clients.

Research Scientist | *Pacific Northwest National Lab, Richland, Washington (7/99 - 10/99)*

During this research co-op at PNNL, I worked on research investigating photoelectron emission from a liquid water jet in high vacuum, and worked to develop a vacuum ultraviolet photon source in the Surface Reaction Kinetics laboratory of Dr. Thomas Orlando.

Doctoral Research | *Chemical Engineering Dept., University of Washington, Seattle, Washington (9/98 - 12/02)*

While working on my PhD research, I worked at the University of Washington Electrochemical Surface Science (UWESS) group under Prof. Eric Stuve. My research focused on high field surface chemistry - primarily using ultra high vacuum surface science techniques, such as field ion microscopy, field emission microscopy, field desorption microscopy, pulsed time of flight mass spectrometry, and ExB ion mass spectrometry.

Consulting Engineer | *Chemical Tracers, Inc., Laramie, Wyoming (9/97 – 11/09)*

Chemical Tracers, Inc. (CTI) is an oilfield service company that specializes in *in situ* fluid saturation measurements, including residual oil saturation, connate water saturation and other key reservoir parameters. Measurements are accomplished using reactive tracers in a Single Well Chemical Tracer (SWCT) test program. Services are primarily utilized for the assessment of Enhanced Oil Recovery (EOR) program efficacy, or for assessing oil in place. For over a decade, I worked for CTI as a field engineer, crew chief, director of engineering, and then on an ongoing consulting basis. I have performed numerous residual oil tests in fields throughout the world, including the US (Alaska, California, New Mexico), Brazil, Russia and Venezuela; carried out EOR one spot pilot tests to evaluate the efficacy of alkaline / surfactant / polymer and CO_2 flooding test programs; continued the development of the computer simulations that model in situ chemical tracer reactivity and fluid flow; prepared and secured contract proposals including CTI's first $1M+ contract; and worked with CTI's President to develop business strategy and manage business operations.

Research Engineer | *CHA Corporation, Laramie, Wyoming (4/97 - 9/97)*

As a Research Engineer at CHA Corporation, my duties included experimental design, data analysis, and the preparation of reports and proposals. CHA Corporation is a research and development firm focusing on microwave induced chemical reactions for environmental remediation. Areas of research included Carbon Adsorbent Systems, Diesel Exhaust Treatment, Microwave Reactor Techniques and NOx / SOx / Volatile Organic Compound Cleanup.

Computer Systems Administrator | *National Centre for Petroleum Geology and Geophysics, Adelaide, South Australia (10/96 - 2/97)*

As Computer Systems Administrator, I assessed the initial state of computer operations at the facility, analyzed the hardware and software trends of industry in Australia and recommended a course of action for upgrading the existing inventory. In addition, I supervised the purchase and installation of the suggested network and workstations, and served as administrator for my remaining time in Australia.

TEACHING EXPERIENCE

The Future of Nanotechnology: Social, Political, and Economic Consequences | *University of Wyoming (2007 -)* – This senior level Honors College course provides a broad examination of the development of nanotechnology. I designed the course to be multidisciplinary and to examine a rapidly advancing field from scientific, social, political, and economic perspectives. Through the course I teach students the physics of novel and emerging technologies, including overviews of quantum physics, semiconductors, and photonics, while situating these technologies in a broader societal context and considering how continued advances in nanoscale science are likely to shape future technological capabilities, economic structures, and policy choices.

Diplomacy and Negotiations | *University of Wyoming (2008 -)* – This upper division course focuses on the development and practical application of diplomacy and negotiation skills, with extensive use of real world role-playing scenarios. Students learn negotiation theory and techniques, and apply them through simulated bilateral and multilateral negotiation exercises. Students also learn how to operate in a diplomatic setting and as part of a delegation. This course is primarily experiential and generally proves to be stimulating and exciting for the participants. It has been offered through the UW Honors College, the International Studies Program and the Political Science Department.

Innovate Wyoming | *University of Wyoming* (2023) – This senior level multidisciplinary Honors College course was co designed and taught with Dr. Penelope Shihab in collaboration with the Wyoming Center for Entrepreneurship and Innovation. The course emphasized experiential learning through statewide travel, visits to Wyoming businesses and startups, and direct engagement with entrepreneurs, innovators, and community colleges. Students worked in interdisciplinary teams to identify real challenges facing Wyoming communities and industries, apply open innovation and entrepreneurial frameworks, and develop and present feasible solutions grounded in market and feasibility analysis.

Ideation, Innovation and Invention | *University of Wyoming (2020, 2022, 2024)* – This senior level multidisciplinary Honors College course introduces students to open innovation through experiential, project based work focused on real world challenges. Students work in interdisciplinary teams to define problems, apply structured ideation techniques, develop and refine solutions and minimum viable prototypes, and assess feasibility and pathways to adoption or invention disclosure. Students are trained in and have access to the University of Wyoming Maker Space as a prototyping resource. The course is highly experiential and student interest driven, emphasizing iterative design and engagement with industry, community, and emerging technology contexts.

Graduate Thermodynamics | *University of Wyoming (2013)* – This graduate level chemical and petroleum engineering course focuses on multiphase, multicomponent equilibria. The curriculum was designed to examine molecular thermodynamics of pure materials and mixtures, specifically covering phase equilibria and the application of equations of state. Key topics included classical thermodynamics of phase equilibria, intermolecular forces, corresponding states, and detailed analyses of fugacities in gas and liquid mixtures. The course also covered specialized systems such as polymer, electrolyte, gas, and solid solutions, preparing students for advanced research and industry applications.

Thermodynamics | *University of Wyoming (2010)* – This core engineering science course introduces undergraduate engineering students to core thermodynamic concepts and principles.

Unit Operations (TA) | *University of Washington (2000-2002)* – I served as a teaching assistant for the Chemical Engineering junior level Unit Operations course for 3 years. As a course TA, I was responsible for teaching and laboratory oversight for one section of students, and oversight of all students for the experiments for which I had responsibility (e.g. ultra-high vacuum transport).

Introduction to Engineering (TA) | *University of Wyoming (1995)* – I served as a teaching assistant for

ES1060 – Introduction to engineering which included laboratory support, grading and some teaching.

UNDERGRADUATE HONORS THESES AND CAPSTONE PROJECTS SUPERVISED

Fink, Owen. *Using Blockchain to Deliver Humanitarian Aid*. **2026.**
Willson, Jean Luc. *Queers in Courts: Accounts of International Courts and LGBTQ+ Rights*. **2026.**
Prior, Casey. *Executive Disorder and Legislative Deregulation: The Impacts of the Limits of the Executive and Legislative Branches in the State of Wyoming*. **2024**.
Henderson, Gerald. *Using Policy to Address the Housing Crisis in Laramie, Wyoming*. **2024**.
Pereverten, Anastasiia. *How to Be an Effective Advocate for Your Cause: A Case Study of Advocacy for Ukraine*. **2024**.
Johnson, Kathryn. *Flavors of Identity: Exploring the Cultural Significance of Central Asian and South Caucasian Cuisine*. **2024**.
Muzzarelli, Anna. *Legislative Committee Reform and New Federal Government Approaches to Solve the Pacing Problem and the Collingridge Dilemma*. **2021**.
Bergman, Connor. *Wyoming Politics: The Effects of Conservative Political Traditions*. **2019**.
Hornlein, Leena. *Expansion of Executive War Powers under the Obama and Trump Administrations*. **2019**.
Edwards, Caitlyn. *"¡Necesito un médico!", but No One Speaks Spanish: Medical Interpretation Policy in Practice*. **2016**.
Korpela, Claire. *Bionanotechnology as a Novel Treatment for Brain Tumors*. **2015**.
Messer, Joshua James. *Good Science, Bad Policy: Why Scientific Consensus Does Not Change Policy*. **2015**.
Heil, Misty. *Atlas D Missile Site 4 Remediation. 2015.*
In progress: Hargett, Gweneth. Gomelsky, Sophia. Morales, Edwin. Bujans, Aaron.

AWARDS AND HONORS

2026 ASUW Outstanding Service Award
2026 Excellence in Experiential Education Award, Honors College
2024 Honors College Excellence in Capstone Mentorship Award (student: Anastasiia Pereverten)
2023 Mortar Board Top Prof Award (student: Casey Prior)
2022 Mortar Board Top Prof Award (student: Bridger Bogus)
2021 Wyoming School Board Association Golden Bell Award
2021 Von Dahl Champion of Education Award
2017 University of Wyoming Debate Hall of Fame Inductee
2014 Mortar Board Top Prof Award (student: Alana DelVecchio)
2011 Wyoming 20 Under 40: Chris Rothfuss

SCIENTIFIC PUBLICATIONS

Rothfuss, C. J., Medvedev, V. K. and Stuve, E. M., 'Cluster formation and distributions in field ionization of

coadsorbed methanol and water on platinum.' *Surface Science* Vol. 650, 2016, pp 130-139.

Rothfuss, C. J.,Medvedev, V. K. and Stuve, E. M., 'The influence of surface electric field on water ionization: A two-step dissociative ionization and desorption mechanism for water ion cluster emission from a platinum field emitter tip,' *Journal of Electroanalytical Chemistry*, Vol. 554-555, 2003, pp 133-143.

Rothfuss, C. J., Medvedev, V. K. and Stuve, E. M., 'Temperature and Field Dependence of Protonated Water Cluster Emission from Field Adsorbed Water Layer on Platinum,' *Surface Science*, Vol. 501, 2002, pp 169-181.

Rothfuss, C. J. and Cha, C. Y., 'Utilisation of a Scrap Tyre - Waste Oil Derived Carbonous Residue as an Asphalt Modifier,' *Polymer Recycling*, Vol. 2, No. 3, 1996, pp 201-212.

PATENTS

Rothfuss, C.J. and Roberts, B.K., "Phase change systems and methods for their preparation and use." US Patent: US 10,226,055. Mar 12, 2019.

Rothfuss, C.J., "Feedstocks for additive manufacturing and methods for their preparation and use." US Patent: US 10,144,152. December 4, 2018.

Madden, T.H. and **Rothfuss, C.J.**, "Electrodes for energy storage devices and methods for their preparation." US Patent: US 10,109,852. Oct 23, 2018.

Chen, S.W. and **Rothfuss, C.J.**, "Simple diffraction gratings for product identification." US Patent: US 10,026,030. Jul 17, 2018.

Chen, S.W. and **Rothfuss, C.J.**, "Physical colorants for plastics based on the Christiansen effect." US Patent: US 9,988,517. Jun 5, 2018.

Rothfuss, C.J., Casasanta, V., and Manion, M.K., "Spatial heat treatment of additively manufactured objects." US Patent: US 9,757,880. Sep 12, 2017.

Rothfuss, C.J., "Method of bonding material layers in an additive manufacturing process." US Patent: US 9,586,371. Mar 7, 2017.

Chen, S.W. and **Rothfuss, C.J.**, "Lift-off layer for separation and disposal of energy conversion devices." US Patent: US 9,331,221. May 3, 2016.

Chen, S.W. and **Rothfuss, C.J.**, "Shape memory alloy composite flexible substrates." US Patent: US 9,314,885. Apr 19, 2016.

Chen, S.W. and **Rothfuss, C.J.**, "Nano-antenna based infrared molecular taggants." US Patent: US 9,291,607. Mar 22, 2016.

Rothfuss, C.J. and Chen, S.W., "Dielectric and/or capacitor formation." US Patent: US 9,230,797. Jan 5, 2016.

Chen, S.W. and **Rothfuss, C.J.**, "Window air conditioner." US Patent: US 9,182,135. Nov 10, 2015.

Chen, S.W., **Rothfuss, C.J.** and Choi, J., "Treating lignocellulosic materials." U.S. Patent: US 8,986,399. Mar 24, 2015.

Chen, S.W. and **Rothfuss, C.J.**, "Augmented reality process for sorting materials." U.S. Patent: US 8,947,456. Feb 3, 2015.

Chen, S.W. and **Rothfuss, C.J.**, "Graphene integrated energy storage devices having capacitive-like properties."

U.S. Patent: US 8,842,416. Sep 23, 2014.

Chen, S.W. and **Rothfuss, C.J.**, "Nano-antenna and methods for preparation and use." U.S. Patent: US 8,698,096. Apr 15, 2014.

Rothfuss, C.J., "Apparatus for analysis of irregular surface using electromagnetic energy." Application No. PCT/US2016/069065. Dec 29, 2016.

Rothfuss, C.J. and Cacioppo, C., "Novel data exchange system and method for facilitating a network transaction." Application No. US-14/253,516. Apr 15, 2014.

Rothfuss, C.J., "Screens for electronic devices, and methods for their preparation and use." Application No. US-15/120,751. Mar 4, 2014.

Chen, S.W. and **Rothfuss, C.J.**, "Flexible surface acoustic wave touchscreen." Application No. PCT/US2013/060300. Sep 18, 2013.

Chen, S.W. and **Rothfuss, C.J.**, "Display integrated energy storage apparatus." Application No. PCT/US2013/048232. Jun 27, 2013.

Chen, S.W. and **Rothfuss, C.J.**, "Device with programmable flexibility." Application No. PCT/US2013/047781. Jun 26, 2013.

Rothfuss, C.J. and Chen, S.W., "Devices for thermal management of photovoltaic devices and methods of their manufacture." Application No. US-13/879,544. Aug 16, 2012.

Chen, S.W. and **Rothfuss, C.J.**, "Flexible transparent air-metal batteries." Application No. US-13/879,863. Aug 14, 2012.

Chen, S.W. and **Rothfuss, C.J.**, "Acoustically driven nanoparticle concentrator." Application No. US-13/879,517. May 14, 2012.

Chen, S.W. and **Rothfuss, C.J.**, "Tissue visualization for resection." Application No. US-13/879,489. Apr 23, 2012.

SELECT PRESENTATIONS, MEETINGS AND WORKSHOPS

INVITED SPEAKER: "Wyoming's Blueprint for Data Property Rights," *SALT/Kraken Wyoming Blockchain Symposium*, Jackson, WY, August 19, 2026.

KEYNOTE SPEAKER: *2026 Wyoming Teacher of the Year Celebration Dinner*, Casper, WY, October 12, 2025.

INVITED SPEAKER: "Digital Asset Policy Panel," *8th Annual Wyoming Blockchain Stampede*, Panelist, Laramie, WY, September 24, 2025.

INVITED SPEAKER: "Legislative Round Table," *Rockies Petroleum Conference*, Panelist, Laramie, WY, August 28, 2025.

KEYNOTE SPEAKER: *UW Global Colloquium*, Laramie, WY, March 29, 2025.

INVITED SPEAKER: *Wyoming Department of Education Level Up Alumni*, Casper, WY, October 13, 2024.

INVITED SPEAKER: "Digital Asset Policy Panel," *7th Annual Wyoming Blockchain Stampede*, Laramie, WY, Panelist, September 18, 2024.

INVITED SPEAKER: "Political Polarization," *BridgeUWYO September 11 Panel*, Laramie, WY, Panelist, September 11, 2024.

INVITED SPEAKER: "Governing in a Polarized Environment: Past and Present," *BridgeUWYO & UW Political Science Panel*, Laramie, WY, Panelist, September 10, 2024.

INVITED SPEAKER: "Blockchain Panel," *Wyoming Digital Government Summit*, Cheyenne, WY, Panelist, May 29, 2024.

KEYNOTE SPEAKER: "Lab-Embedded Entrepreneurship Program (LEEP) Welcome," *National Labs @ UWYO*, Laramie, WY, October 16, 2023.

INVITED SPEAKER: "Laramie Then & Laramie Now: Remembering Matt Shepard," *Shepard Symposium on Social Justice*, Laramie, WY, Panelist, October 12, 2023.

INVITED SPEAKER: "Central Bank Digital Currency Panel," *6th Annual Wyoming Blockchain Stampede*, Laramie, WY, Panelist, September 15, 2023.

INVITED SPEAKER: "Wyoming State Policy and Politics Roundtable," *Rockies Petroleum Conference*, Panelist, Laramie, WY, August 24, 2023.

INVITED SPEAKER: "Legislative Panel," *Wyoming Association of Career & Technical Education (WACTE) Summer Conference*, Cheyenne, WY, Panelist, June 14, 2023.

INVITED SPEAKER: "Digital Assets and Economic Development in Wyoming," *5th Annual Wyoming Blockchain Stampede*, Panelist, Laramie, WY, September 22, 2022.

INVITED SPEAKER: "Blockchain and the Energy Sector in Wyoming," *Wyoming State Bar Association Continuing Education*, Virtual Session, June 8, 2022.

INVITED SPEAKER: "Legislative Panel," *Wyoming Association of Municipalities Annual Summer Convention*, Panelist, June 9, 2022.

INVITED SPEAKER: "The 'Crypto Cowboy State': How Wyoming became the center of cryptocurrency," *Meet the Press*, Interview, March 21, 2022.

INVITED SPEAKER: "Wyoming Breaks New Legal Ground With Digital Identity and DAO Laws," *Coin Toss Interview X CoinDesk TV*, Virtual Session, April 28, 2021.

INVITED SPEAKER: "TRM TALKS: Cowboys and Crypto," *TRM Labs*, Virtual Session, April 13, 2021.

INVITED SPEAKER: "Digital Identity Legislation in Wyoming," talk by Zoom to the MIT IAP Computational Law Course, January 22, 2021.

INVITED SPEAKER: "State of Wyoming – Legal Framework for Digital Assets and Blockchain," *Mobile Payments Industry Workgroup - Federal Reserve Bank of Atlanta*, Atlanta, Georgia, January 21-22, 2020.

INVITED SPEAKER: "Panel: What's Next? Cryptography & Blockchain Technology," *Council of State Governments Policy Academy 2019*, San Juan, Puerto Rico, December 4, 2019.

INVITED SPEAKER: "Panel: One Hundred Years of Empowering Voters: The League of Women Voters Demonstrates Voting Methods and their Effects," *The League of Women Voters or Laramie*, Laramie, Wyoming, November 9, 2019.

INVITED SPEAKER: "Panel: Wyoming Legislation Panel," *Global Blockchain Summit*, Westminster, Colorado, October 4, 2019.

INVITED SPEAKER: "Panel: Civic Engagement for Scientists: Getting Involved With Local Government," *Ecological Society of America 2019 National Conference*, Louisville, Kentucky, August 12, 2019.

INVITED SPEAKER: Opening Remarks, *Shape Wyoming's Next Energy Strategy*, Wyoming Infrastructure Authority, Cheyenne, Wyoming, October 5, 2018.

KEYNOTE SPEAKER: "Science, Policy and Politics: A Non-Traditional Chemical Engineering Career Path," *11th Annual Chemical Engineering Graduate Student Symposium,* Seattle, Washington, September 20, 2018.

KEYNOTE SPEAKER: *National Society of Leadership and Success Induction Ceremony Keynote,* Laramie, Wyoming, April 29, 2018.

State Legislative Leaders Foundation 2017 Technology Summit, Los Angeles, California, October 26-28, 2017.

Stroock Sovereign Wealth Forum, Spring Creek Ranch, Jackson Hole, Wyoming, August 23-24, 2016.

INVITED SPEAKER: "Panel: Public Debate on Wyoming's Economy," *A Public Debate*, University of Wyoming Debate Team, Laramie, Wyoming, March 8, 2016.

The White House Convening of State Education Leaders, White House, Washington D.C., December 8, 2015.

INVITED SPEAKER: *Panelist, Economic Forecast Luncheon,* Wyoming Business Report, Cheyenne, Wyoming, November 8, 2015.

INVITED SPEAKER: *Wyoming Governor's Broadband Summit,* Cheyenne, Wyoming, November 5, 2015.

INVITED SPEAKER: "Panel: Should the state of Wyoming eliminate the criminal prohibition of marijuana?" *A Public Debate*, University of Wyoming Debate Team, Laramie, Wyoming, April 30, 2015.

INVITED SPEAKER: *An Evening of Celebration for National Board Certified Teachers*, Ellbogen Foundation, Cheyenne, Wyoming, February 7, 2014.

INVITED SPEAKER: "A S&T Policy Fellow's Journey to State Legislature with Chris Rothfuss," *AAAS Fellows Invited Talk*, American Association for the Advancement of Science, Washington D.C., April 23, 2013.

INVITED SPEAKER: "Panel: Linking Science and Policy: Cultivating Leaders to Effect Evidence-based Policy that Serves Society," *14th Annual International Leadership Association Global conference*, Denver, Colorado, October 26, 2012.

INVITED SPEAKER: "Panel: Wyoming Perspective," *Wyoming Education Summit*. Ucross Ranch, Wyoming, September 14, 2012.

NanoBusiness Alliance Conference 2007, New York, New York, April 15-17, 2007.

US DELEGATE *Forty-ninth Session of the UN Committee on the Peaceful Uses of Outer Space (COPUOS)*, Vienna, Austria, June 6-16, 2006.

US DELEGATE *US-EU Space Summit*, Brussels, Belgium, March 23-24, 2006.

US DELEGATE *Forty-third Session of the UN COPUOS Scientific and Technical Subcommittee*, Vienna, Austria, February 20 - March 3, 2006.

INVITED SPEAKER: "Nanotechnology and Foreign Policy," *Global Security Consortium 2005 Winter Summit*, George Washington University, Washington D.C., December 14, 2005.

US DELEGATE *US-Italy S&T Joint Commission Meeting*, Rome, Italy, September 27-28, 2005.

INVITED SPEAKER: "Capacity Building at the U.S. Department of State," *Engineers Without Borders - USA National Conference*, September 22-25, 2004.

INVITED SPEAKER: "Current Nanotechnology Foreign Policy Issues," *Structures and Materials Intelligence Symposium*, Science and Technology Expert Partnership, MITRE Corp, Washington D.C., September 8, 2005.

International Council on Nanotechnology Steering Group, New York, New York, August 16-17, 2005.

US DELEGATE *International Dialogue on the Responsible Research and Development of Nanotechnology*, Brussels, Belgium, July 14-15, 2005.

Global Dialogue on Nanotechnology and the Poor - Steering Group Meeting, London, England, June 22-23, 2005.

US DELEGATE *Forty-eighth Session of the UN Committee on the Peaceful Uses of Outer Space*, Vienna, Austria, June 13-17, 2005.

1st International Nanotechnology Conference on Communication and Cooperation, San Francisco, CA, June 1-3, 2005.

US DELEGATE *International Inter-Agency Space Debris Coordination (IADC) Committee Annual Meeting and Steering Group*, Darmstadt, Germany, April 21-22, 2005.

US DELEGATE *Forty-second Session of the UN COPUOS Scientific and Technical Subcommittee*, Vienna, Austria, February 28 - March 4, 2005.

Nano Tech 2005, Tokyo, Japan, February 23-25, 2005.

"Small size - large impact?" - Swiss Re Dialogue on Nanotechnology, Rüschlikon, Switzerland, December 6-7, 2004.

ORGANIZER: *Quantum Computing and Cryptography Workshop*, Rosslyn, Virginia, November 19, 2004.

US DELEGATE *International Inter-Agency Space Debris Coordination (IADC) Committee Annual Meeting and Steering Group*, Vancouver, British Columbia, October 5, 2004.

NNI Research Directions II Workshop, National Academy of Science, Washington, D.C., September 8-9, 2004.

NNI Grand Challenge Workshop on Nanotechnology in Space Exploration, Palo Alto, California, August 24-26, 2004.

Department of Energy NanoSummit: Nanoscale Science and Our Energy Future, Washington, DC, June 23-24, 2004.

International Dialogue on the Responsible Development of Nanotechnology, Alexandria, Virginia, June 17-18, 2004.

US DELEGATE *1st China - U.S. Nanotechnology Dialogue*, Chinese Academy of Sciences, Beijing, China, May 17-19, 2004.

ORGANIZER: *Science, Technology and Engineering Capacity Building in Iraq*, Rosslyn, Virginia, March 29, 2004.

NNI Grand Challenge Workshop on Nanoscience Research for Energy Needs, Arlington, Virginia, March 16-18, 2004.

NNI Grand Challenge Workshop on Nanoscale Instrumentation and Metrology, National Institute of Standards and Technology, Gaithersburg, Maryland, January 27-29, 2004.

"Water / Methanol Ion Cluster Formation on Platinum Surfaces at High Electric Fields" Talk presented at American Vacuum Society 49th International Symposium, Nov. 3 - 8, 2002.

"A Two Step Dissociative Ionization and Desorption Mechanism for Water Ion Cluster Emission from a Platinum Field Emitter Tip" Talk presented at AIChE Annual Meeting, 2001.

"A Two Step Dissociative Ionization and Desorption Mechanism for Water Ion Cluster Emission from a Platinum Field Emitter Tip" Talk presented at American Vacuum Society 48th International Symposium, Oct. 28 - Nov. 2,

2001.

"A Two Step Dissociative Ionization and Desorption Mechanism for Water Ion Cluster Emission from a Platinum Field Emitter Tip" Poster presented at Pacific Northwest Chapter American Vacuum Society Annual Meeting, 2001.

"Water Ion Cluster Formation in High Electric Fields at and near a Platinum Emitter Tip" Talk presented at AIChE Annual Meeting, Nov. 12 - 17, 2000.

"Water Ion Cluster Formation in High Electric Fields at and near a Platinum Emitter Tip" Talk presented at American Vacuum Society 47th International Symposium, Oct. 6 - 8, 2000.