Candidate information

Name: Matt Reuer ***Title:*** Technical Director
Company name: Colorado College
Complete work address: Chemistry and Biochemistry, Colorado College, 14 E Cache La Poudre Colorado Springs, CO 80903
Work phone: 719-389-6436 ***Email:*** mreuer@coloradocollege.edu

Candidate's immediate supervisor's information

Supervisor's name: Murphy Brasuel ***Supervisor's title:*** Chair of Chem & Biochem
Work Phone: 719-227-8256 ***Email:*** mbrasuel@coloradocollege.edu

Nominator's information

Nominator's name: Nathan Bower ***Nominator's title:*** Prof. of Chemistry
Work Phone: 719-389-6432 ***Email:*** nbower@coloradocollege.edu

Candidate Eligibility

All three boxes in the Eligible column must be checked for candidate to be eligible.

	Eligible	***Ineligible***
1. Is the candidate a chemistry-based laboratory technician, process technician, operator, analyst, or other applied chemical technology professional?	☒ Yes	☐ No
2. Has the candidate been employed for at least five years as an applied chemical technology professional?	☒ Yes	☐ No
3. Is the candidate currently a member of the Committee on Technician Affairs Executive Board and/or Advocacy & Public Relations Subcommittee?	☒ No	☐ Yes

Candidate's contribution in six areas of award criteria

Make space as necessary under each category. Total packet, including letter(s) of recommendation. must not exceed 6 pages, minimum 10-point font. Do not include proprietary, confidential, or private information.

Technical Achievements (worth 60%)

Single-handely provides superb instrumental support and training for 15 faculty and 300+ students for both lab and field equipment (including NMR, IR, AA, ICP-OES, XRF, XRD, MS, UPLC, HPLC, IC, PLM, UV-VIS and Fluorimetry, and AV and computer hardware and software, including GIS, Microsoft and Mac platforms. He does this for the Environmental Sciences as well.

He writes manuals for instrument users and maintains the equipment.

He maintains departmental web sites and trains faculty in software and hardware upgrades for their lectures and for professional meeting posters and presentations.

He develops and constructs small pieces of equipment to solve problems such as improvements in a syringe pump that greatly reduced hand fatigue in the field, and he has written interface software using LabView for development of a magnetic scanner for imaging paintings.

Other (Considered together to make up the remaining 40%)

Leadership/Mentoring (1-15%)

He has led student and faculty volunteers on international service projects in Maharashtra, India and La Oroya, Peru to analyze and provide improved water to these communities. Digging wells as well as interviewing local people to find out what will best meet their needs and then finding ways to achieve these goals has been just one of the outcomes. Students who have been on

trips with him have had life-transforming experiences, and he has submitted a paper for publication with results from the analyses he did on the heavy metal water and soil burdens in Peru, relating them to the high blood levels found in children there.

Matt directly interacts with and provides insight to research students working under faculty about how to design their experiments and how to get good data. Provides feedback on their presentations and gives direct oversight on at least one thesis per year.

He has served (and is serving) on a host of campus committees, including ones dealing with campus sustainability issues, chemical waste handling, web site redesigns, and fair working conditions and compensation for staff and outsourced jobs.

Number of communications/publications (1-5%) Please do not include titles.
9 pubs in the last 8 years; 5 of these in the 6 years he has worked at Colorado College.

External publications, presentations, patents (1-5%)
10) Reuer, M.K., Bower, N., Koball, J., Hinostroza, E., Marcas, M.E.D., Surichaqui, J.A.H., In Press. Lead, Arsenic, and Cadmium Contamination and its Impact on Children's Health, La Oroya, Perú. Submitted to ISRN Public Health.

9) Boyle, E.A., Kelly, A.E., Reuer, M.K., Goodkin, N.F., 2009. Lead concentrations and isotopes in corals and water near Bermuda, 1780-2000. Earth and Planetary Science Letters, 283(1-4): 93-100.

8) Reuer, M.K., 2007. Erratum to "New estimates of Southern Ocean biological production rates from O2/Ar ratios and the triple isotope composition of O2". Deep-Sea Research Part I Oceanographic Research Papers, 54(10): 1853-1858.

7) Reuer, M.K., Barnett, B.A., Bender, M.L., Falkowski, P.G., Hendricks, M.B., 2007. New estimates of Southern Ocean biological production rates from O2/Ar ratios and the triple isotope composition of O2. Deep-Sea Research Part I-Oceanographic Research Papers, 54(6): 951-974.

6) Kaiser, J., Reuer, M.K., Barnett, B., Bender, M.L., 2005. Marine productivity estimates from continuous O2/Ar ratio measurements by membrane inlet mass spectrometry. Geophysical Research Letters, 32(19).

5) Lima, A.L., Bergquist, B.A., Boyle, E.A., Reuer, M.K., Dudas, F.O., Reddy, C.M., Eglinton, T.I., 2005. High-resolution historical records from Pettaquamscutt River basin sediments: 2. Pb isotopes reveal a potential new stratigraphic marker. Geochimica Et Cosmochimica Acta, 69(7): 1813-1824.

4) Reuer, M.K., Boyle, E.A., Cole, J.E., 2003a. A mid-twentieth century reduction in tropical upwelling inferred from coralline trace element proxies. Earth and Planetary Science Letters, 210(3-4): 437-452.

3) Reuer, M.K., Boyle, E.A., Grant, B.C., 2003b. Lead isotope analysis of marine carbonates and seawater by multiple collector ICP-MS. Chemical Geology, 200(1-2): 137-153.

2) Weiss, D., Boyle, E.A., Wu, J.F., Chavagnac, V., Michel, A., Reuer, M.K., 2003. Spatial and temporal evolution of lead isotope ratios in the North Atlantic Ocean between 1981 and 1989. Journal of Geophysical Research-Oceans, 108(C10).

1) Reuer, M.K., Weiss, D.J., 2002. Anthropogenic lead dynamics in the terrestrial and marine environment. Philosophical Transactions of the Royal Society of London Series a-Mathematical Physical and Engineering Sciences, 360(1801): 2889-2904.

Internal presentations, publications (1-5%) Include SOPs, presentation to teams, etc.
Matt has taught two complete courses (Global Biogeochemistry and Ecosystem Ecology) when faculty were unavailable or unable to cover these courses. He has given many internal presentations on instrument use, web design, campus sustainability.

Contribution to quality, safety, and other initiatives (1-5%)
He has provided training for the department paraprofessionals (equivalent to TAs) on waste disposal, small equipment maintenance, and lab safety. He has filled in as the Safety Officer for the Chemistry and Environmental Science departments when the campus officer was let go.

Awards (1-5%)
Partnership Award, Colorado College Center for Service and Learning, 2010
Otis A. and Margaret T. Barnes Service Award, Department of Chemistry and Biochemistry, Colorado College, 2009
EPA Excellence Award, 2007 (related to climate change report for State of the Rockies Project)

Professional and community activities (ACS, AIChE, outreach, etc.) (1-10%)
Matt has served in campus outreach projects such as teaching about alternative energy and providing home energy audits and retrofits to those living in substandard housing.

He has provided support for "Cool Science" activities that do outreach to local area elementary and high schools.

He provided technical support for the widely aclaimed "State of the Rockies" project and web site that has served both students and professionals with up-to-date data for the sustainable development initiatives in the Rocky Mountain West.

See also his work providing leadership on outreach overseas under "leadership" activies.

Colorado College

Mark O'Brien
Staff Liaison, ACS Committee on Technician Affairs (CTA)
Office of Technician Education and Resources
American Chemical Society
1155 Sixteenth St. NW
Washington, DC 20036

September 27, 2011

I am writing in support of **Matthew (Matt) Reuer's** nomination for the American Chemical Society National Technician Award. I have known Matt since 2004, when he started as the Technical Director in the Environmental Science program at Colorado College. Even as the technical director of Environmental Science, Matt was always willing to lend time, effort, and expertise to the maintenance and repair of instruments in the Chemistry and Biochemistry Department. It was an easy decision when we had the opportunity to convert Matt's nine month contract into a twelve month contract by creating a joint appointment between Environmental Science and Chemistry. Matt's work has been invaluable to our ability to make our current staffing practices in Chemistry work with our unique calendar system (The Block Plan). He has demonstrated initiative, leadership, and mentoring through the supervision of undergraduate thesis projects and the willingness to leverage his research interests in other parts of the world into International Service Trip opportunities for Colorado College students.

Colorado College is taught on the Block Plan. The students take one course at a time and cover a semester's worth of material in 3.5 weeks. Labs are integrated into the lecture courses. In the initial transition to the block plan all lab courses were team-taught. Through political, pedagogical, and economical strife over the past 10 years these lab courses have been transitioned from team-taught courses into courses with an individual instructor. It would be impossible to prepare course material and lab material as well as troubleshoot instrumentation with only a single instructor in the requisite time frame without Matt's help. An unexpected instrument break down causes a cascade of obstacles that can "sink" the whole course. Matt has been invaluable in handling the instrument preparation for most of the courses. He has been a magician in trouble shooting and making sure the instruments are ready for the labs. The challenge of the Block Plan is that there is not time for an instrument to be down for more than 24 hours. Matt has trained himself so that he can make most of the repairs that a service visit would handle, as long as he has the parts available. There have been times that he made repairs even when the part was not on hand by using our campus machine shop to repair or fabricate the necessary piece.

We do not require Matt supervise and mentor undergraduate projects. However, he has willingly taken the mentorship role with at least six students since 2006. His expertise in Environmental Analytical Chemistry has significantly strengthened these projects and his input of time has been a great help to the faculty members who would have been called on to play this role. Students learn from him the best practices in sample preparation and replication, statistical analysis of data, and experimental control. Matt is a very careful scientist and he is excellent at teaching students these best practices through example and mentorship in the lab. Matt feels strongly that the mentorship of young scientists is an important aspect of being a scientist.

I cannot picture our program without Matt. Keeping up with his official duties is more than a full time job, especially considering the turnaround time required for emergency equipment repair on the Block Plan, yet he goes the extra mile mentoring students. The staff at Colorado College has recognized his leadership abilities and he has been elected to the Staff Council. Matt clearly is a fine Technical Director, a great scientist, and a respected leader. I strongly recommend him for the ACS National Technician Award.

Sincerely,

Prof. Murphy G. Brasuel
Chair of Chemistry and Biochemistry

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