Candidate information

Name:	Kathy S. Collins	***Title:***	Senior Technician
Company name:	ChevronPhillips Chemical Company		
Complete work address:	Bldg 84 G, Bartlesville Research Center Highways 60 and 123A Bartlesville, OK 74004		
Work phone:	918-661-1855	***Email:***	ColliKS@CPChem.com

Candidate's immediate supervisor's information

Supervisor's name:	Dr. Max McDaniel	***Supervisor's title:***	Senior Fellow, Catalysis
Work Phone:	918-661-9974	***Email:***	McDanMP@CPChem.com

Nominator's information

Nominator's name:	Max McDaniel	***Nominator's title:***	Senior Fellow, Catalysis
Work Phone:	918-661-9974	***Email:***	McDanMP@CPChem.com

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%)

Education:

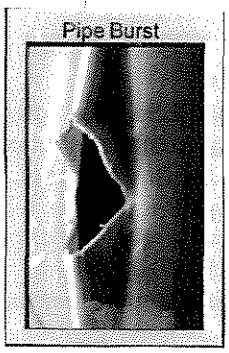
Kathy has completed three years of college, majoring in math and chemistry. She graduated with an Associate of Mathematics degree in the Phi Theta Kappa Honor Society. During this time she was an active member in the Science and Engineering Club, and was cited in Who's Who of American Junior Colleges. In 2003 she went back to college to obtain an Associate of Chemistry degree as well, with a minor in environmental management. Her cumulative grade point average for both degrees was 3.7.

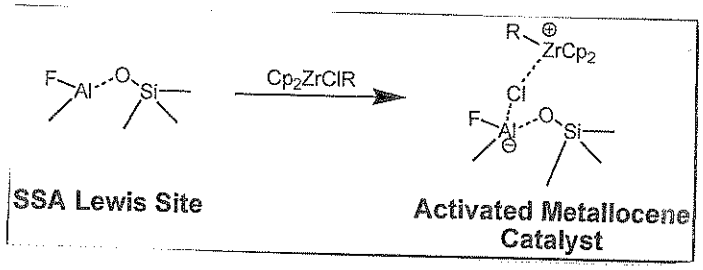
Research Activities:

Kathy worked under my (MPM) direction for almost 20 years. Behind her cooperative approach is an independence of thought that I have really come to value in our day-to-day work. Kathy knows more chemistry than any other technician in our group, and possibly in all of CPC Bartlesville research. She knows enough chemistry and math to occasionally question my research directions, and when she does she is often right. She has invented several catalysts on her own, by following up on some original idea of hers, and she has co-authored over 51 issued patents based on these observations, and 12 publications in scientific journals. She conducts research experiments independently with minimal supervision and usually with only minimal written directions. Her previous supervisors, Beth Lanier and Eric Hsieh, had

similarly high opinions of Kathy, and gave her the highest ratings. Although Kathy contributed to many research activities where she has independently distinguished herself by her creativity, devotion to detail, knowledge of chemistry, and her tenacity, I have selected only three examples to represent this considerable effort over 20 years.

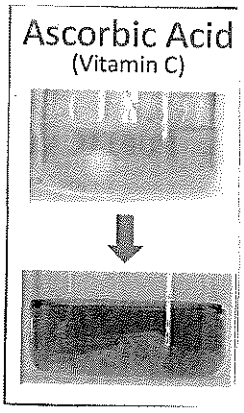
1. Kathy worked with me (MPM) for 6 years to discover and develop a new method of activating metallocenes for polymerization of ethylene -- a method that is now commercial and the foundation of Chevron-Phillips proprietary catalyst technology. We refer to this discovery as SSA (solid super-acid). During the SSA breakthrough, Kathy contributed many independent and creative ideas that later became patented. She also took on the responsibility of scaling up pilot plant catalysts, checking their quality, and keeping the pilot plant supplied with catalyst and metallocene solutions around the clock. I truly came to appreciate her valuable insight, her knowledge of chemistry, and her attention to detail. The catalyst system that we use commercially today contains many unique contributions from Kathy.



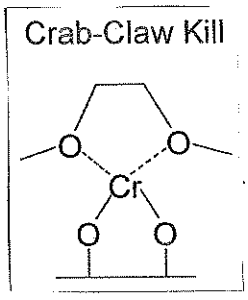


She performed a similar role during the H524 work, which provided the world's first high performance (PE-100) pipe from one reactor. These projects, and others, frequently involved working after hours and on weekends in support of the pilot plant. For example, during the first test of the Continuous Activator, which was a new way of activating Phillips' Cr-based catalysts (which provides about 40% of HDPE, the world's most widely used plastic), she designed and produced 50 lbs of the dyed-silica injection material.

2. Kathy necessarily works with a suspected human carcinogen, hexavalent chromium, and consequently takes great caution when doing polymerization experiments. When it was noticed that the HE&S-recommended method of neutralizing Cr(VI) spills using Fe(II) did not work in all situations, Kathy pioneered a new and improved method. She independently conducted a survey of reducing agents and proposed a better method. She found that ascorbic acid (vitamin C) was extremely effective, even at ppm concentrations, at neutralizing Cr(VI). The new material is also low in cost, non-toxic, watersoluble, and leaves no undesirable residues. Because of her work, ascorbic acid has now been adopted by Chevron-Phillips and its global licensees to neutralize Cr(VI) spills, to decontaminate and clean up work areas, and even to decontaminate worker's shoes and clothing. This work was presented by Kathy at the International Information Exchange in 2010 to a global licensee family, where it was received with considerable enthusiasm. The method has since been adopted overseas at several locations now.



3. Kathy also pioneered another safety-related research activity. Chevron-Phillips polymerization reactors are equipped with a fail-safe "brake" to stop a run-away reaction and thus prevent possible injuries or fatalities (i.e. 1989). When the temperature or other reaction parameters exceed certain limits, the computer automatically injects large quantities of water, which stops the reaction. It was noticed, however, that this method is not very efficient because water is not the best kill-agent for this purpose, and it tends to contaminate the reactor afterward. In another independent



research activity, of great importance to the company, Kathy conducted experiments with other kill agents that are more effective, and require less clean-up afterward. We call these agents "crab-claw" compounds because they have the shape to coordinate in a bi- or tridentate mode to the active site. In essence, these compounds grab the active site like a "crab-claw" and will not let go. They are thus more effective, and greatly diminish the amount needed to stop a run-away reaction. Kathy's work was presented to the International Information Exchange in 2010 to a global licensing family, where it received considerable interest and attention by engineers from many companies. This discovery has since been patented and described in R&D reports.

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

Leadership/Mentoring (1-15%)

I have not met a more good-natured or caring employee than Kathy. She takes great personal satisfaction in helping others – everyone in fact. In an era of platitudes about teamwork and team players, Kathy is the genuine article. She thrives in an environment of cooperation and mutual help, and enjoys sharing her extensive technical knowledge with others, and recognizing their unique contributions too. She has been a frequent team leader on many projects and occasions within the company, and she serves well by establishing a climate of shared respect. This is no doubt why she was chosen to represent Northeast Oklahoma Technicians at several national ACS meetings in Washington DC.

Kathy has regularly contributed to science activities including the local Bartlesville District Science Fair, in which she is usually a judge, and National Chemistry Week activities, in which she performs demonstrations in grade schools, helps solicit donations, rounds up supplies, and assembles kits for mass distribution. She has also assisted with the Green Country Science Teacher's Workshop in most years since 1993. Her contribution includes setting up and conducting numerous experimental demonstrations.

Kathy has also participated in the Habitat for Humanity CT committee, and in the actual Habitat construction work. On several occasions she has helped organize many Research Center social events such as summer picnics. She has donated blood plasma over fifty times that required traveling to Tulsa on her own time, and served as girl scout leader for three years. Kathy has also secured a Chevron Phillips Good Neighbor Grant for the Miles for Mammograms event to make a positive impact in our community.

Number of communications/publications (1-5%) Please do not include titles.

86+

External publications, presentations, patents (1-5%)

Kathy has co-authored 12 scientific publications in peer-reviewed journals, including Journal of Catalysis, Applied Catalysis, Journal of Polymer Science, and Macromolecules. She has co-authored 51 US Patents and numerous foreign patents. She has given lectures at two ACS national meetings (see below). She has presented two lectures on her own independent work (one related to safety -- see above) at the International Exchange Meeting of CPC Licensees, where she addressed scientists and engineers.

Internal presentations, publications (1-5%) Include SOPs, presentation to teams, etc.

Kathy has authored or co-authored some 23 research reports inside Chevron-Phillips Chemical Co. The subjects varied widely (Ziegler, chromium, and metallocene catalysis) but always related to the company's position as a global manufacturer and licensor of polyethylene technology. Many were of great financial significance. Because Chevron-Phillips is an international licensor of technology, with a hundred licensee reactors running globally, Kathy's work found utility in many parts of the world.

Contribution to quality, safety, and other initiatives (1-5%)

Kathy has often played a leadership role in Phillips and CPC safety programs over many years. She has served as Editor of the Behavioral Safety Newsletter, as Secretary, and later as Chairman of Phillips Behavioral Safety Program. She co-authored & co-presented a 90 minute training session "Communication Tools" at the Behavioral Safety National Users

Conference which detailed the communications tools used to promote the behavioral safety program within Phillips R&D. She also helped put together posters that were presented at other national meetings. She has twice served as catalyst group safety coordinator for a total of four years. She is quick to take responsibility for building 84G, conducting audits, and serving as building marshal.

Her experimental work has also often focused on safety. For example, she recently conducted a Cr(VI) neutralization study, which noted problems with current corporate policy and identified vitamin C as a more reliable neutralization reagent. This study resulted in a policy change implemented by Corporate HE&S at all CPC plants, and at many licensees. She also performed most of the "crab-claw" reaction kill experiments that also offer some major safety benefits when implemented.

On another occasion Pasadena operations personnel asked for her help with a bagfilter problem. She independently designed and carried out a laboratory program that tested the reactivity of filter materials with triethylaluminum, which is pyrophoric. Her results on this project had major consequences at CPC plants both in terms of safety and cost.

Awards (1-5%)

In addition to many patent awards and recognitions, and team leader positions, Kathy has also received numerous awards for her contributed ideas. Chevron-Phillips has a program designed to recognize and reward contributions from technicians and even professionals who make extraordinary suggestions that greatly enhance the company's profit or safety. Kathy has consistently been recommended for this monetary reward award each year for various technical accomplishments and suggestions, which she has received. In fact, she has been one of the most prolific contributors at Chevron-Phillips since its founding in 2001. Recently, Kathy received the 2011 Northern Oklahoma American Chemical Society Overall Technician of the Year Award.

Professional and community activities (ACS, AIChE, outreach, etc.) (1-10%)

During two of the past three years Kathy was invited to Washington DC, at ACS expense, to represent technicians from the Northeast Oklahoma section of ACS at the ACS Technicians Conference, where she advised on chemical education and training, and on laboratory safety. Kathy was chosen because of her long service to ACS. She was one of the original founders for the ACS Technicians Affiliate Group, NEO TAG (Northeast Oklahoma Technicians Affiliate Group), in 1992. Since then she has served in various capacities including Secretary, Vice Chair, and Chair positions. Kathy and another technician developed a poster session entitled "Establishing an ACS Technicians Affiliate Group" and presented it at the Ponca City Pentasectional ACS Meeting. She helped put together a Technicians Affiliate Group exhibit at an ACS booth at the Bartlesville HE&S Street Fair. She represented NEO TAG at the Boston National ACS meeting and attended the ACS Meeting in Dallas partly at her own expense. In fact, for many years she has attended and served at local and national ACS meetings and functions.

As noted above, Kathy has regularly contributed to science activities including the local Bartlesville District Science Fair, in which she is usually a judge, and National Chemistry Week activities, in which she performs demonstrations in grade schools, helps solicit donations, rounds up supplies, and assembles kits for mass distribution. She has also assisted with the Green Country Science Teacher's Workshop in most years since 1993. Her contribution includes setting up and conducting numerous experimental demonstrations. Kathy has also regularly donated much of her time for the Miles for Mammograms event, and even obtained a Chevron Phillips Good Neighbor Grant.

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Dr. Erin Tullos
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June 28, 2011

Re: Northeast Oklahoma ACS Technician of the Year

Dr. Tullos:

I would like to second the nomination of Ms. Kathy S. Collins for the 2011 North East Oklahoma American Chemical Society Technician of the Year Award. Since the beginning of my tenure at Chevron Phillips Chemical Co. in 2010, I have had the opportunity to work alongside Ms. Collins in the same laboratory on a daily basis. During this time, I have witnessed firsthand Ms. Collins' commitment and dedication to research excellence and laboratory safety practices, as well as her amicable and helpful personality. As a newcomer I initially needed help, and Ms. Collins who shared the 84G laboratory with me, went to considerable lengths to welcome and coach me.

Ms. Collins is a thorough and independent researcher who possesses an impressive amount of scientific knowledge and experience, particularly in respect to the preparation, characterization and application of ethylene polymerization catalysts. On a daily basis, Ms. Collins conducts world-class scientific research in a safe and efficient manner, while working with dangerous (e.g., flammable, toxic, carcinogenic, pyrophoric) substances. Often times, I find myself engaged in and benefiting from conversations with her on a variety of different research and safety related subjects, which in the past have included topics on polymerization reaction conditions, choice of co-catalyst and catalyst activation conditions just to name a few examples. Aside from her wealth of scientific knowledge, one of most remarkable traits of Ms. Collins' is the passion she has for her work, which is clearly evident to anyone around her – she is deeply invested in the research that she performs and takes pride in it.

I would be remiss if I did not mention Ms. Collins' friendly, generous and helpful nature – something that I consider to be one of her greatest assets, and that I have enormously benefitted from. Ms. Collins goes above and beyond normal expectations to create a pleasant and productive work environment. Due to the nature of my research, which differs from the work that was previously being conducted at 84-G, I have had to make several changes and additions to the lab since joining the company. Despite the upheaval this has caused, Ms. Collins has welcomed me without resentment into what used to be entirely her work space, and has spent a substantial amount of time assisting me on numerous occasions with the installation and set up of various pieces of research equipment (e.g., vacuum lines, glove box, melt-mixer etc). As we looked to add another technician to our building's roster, Ms. Collins volunteered to condense her personal work area even further in anticipation of the needs of this new, unknown person.

I find it both a pleasure and a privilege to work alongside someone of Ms. Collins' faculties, and highly recommend her for 2011 North East Oklahoma American Chemical Society Technician of the Year Award.

Sincerely,

Dr. Carlos A. Cruz
Chevron-Phillips Catalysis Group

Dr. William B. Beaulieu
Polyolefins Catalyst and Product Development Manager

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June 28, 2011

Dr. Erin Tullos:

It is my pleasure to second the nomination of Kathy S. Collins for consideration as the Northeast Oklahoma ACS Technician of the Year. Kathy is an outstanding technician and one that you would have to go to great lengths to find an equal. She has authored or co-authored over 50 patents at this time. In addition, she regularly gives presentations at our biannual Licensing Information Exchange Meeting. She is a strong proponent of safety and regularly serves on safety committees. She is also active in the ACS and is often asked to help with national issues affecting technicians.

Kathy has worked in the Polyolefin Catalyst Group of Chevron Phillips Chemical Company for over 20 years and has performed extremely well during this time, contributing many independent insights and discoveries to our efforts over the years. I have had the opportunity to evaluate and appreciate Kathy's contributions during the past seven years, and have come to respect her sincere and creative approach to our research goals.

Along with volunteering her time outside work hours to community service, as an employee of Chevron Phillips, Kathy has also secured a Chevron Phillips Good Neighbor Grant for the Miles for Mammograms event, making a positive impact on the greater community in which she lives.

Please give her all due consideration for this award. I am sure that you will be impressed with her service to the ACS and to chemistry in general.

Sincere regards,

Bill Beaulieu

Dr. William B. Beaulieu
Chevron Phillips Chemical Company

cc: CPChem R&T Records: Beaulwb-2011-02