



The Voice of the PSM

Summer/Fall 2015

Volume 8, Issue 1

Please Join Us

**NPSMA 6th National Conference
And Members Meeting**

***"Professional Science Master's Programs:
The Vital Link between Higher Education
and the STEM Workforce"***

Thursday-Friday

November 12-13, 2015



**Crowne Plaza National Airport
1480 Crystal Drive, Arlington, VA
Registration Opens July 6th**

View program and register at <http://www.npsma.org/upcoming-national-conferences>. Discount registration until September 8. Deadline to register: October 30.

You are Invited

NPSMA Pre-Conference Workshop

"Help! Where Can I Place My Students?"

Finding Opportunities

in Industry and Government

for your PSM Students"

Wednesday

November 11, 2015



**Crowne Plaza National Airport
1480 Crystal Drive, Arlington, VA
Registration Opens July 6th**

View program and register at <http://www.npsma.org/upcoming-workshops>. Discount registration until September 8. Deadline to register: October 30.

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NPSMA Webinar Series

Session II: Date TBA

[Click Here](#) to view the webinar which was held on April 28, 2015: "Branding and Marketing PSM Programs: How PSM Affiliation and NPSMA Membership Can Help"

Serve on the 2016 NPSMA Board of Directors

The NPSMA has five (5) vacant positions to be filled on the Board of Directors for 2016. One of those positions must be filled by a PSM alum. Duly paid-to-date members of the NPSMA are invited to nominate themselves or other NPSMA members to the Board of Directors. The Nominating Committee will present the slate of candidates to the NPSMA membership in late September, 2015, with electronic voting to take place in October 2015. The nomination procedures and requirements will be emailed to members on August 3rd.



Members of the 2014 NPSMA Board of Directors: (front row) Carol Lynch, Marilyn Wells, Tara Johnson, Joan Huber; (back row) Saeed Foroudastan, Deborah Silver, Cynthia Bainton, Joaquin Carbonara, Sheila Thomas, David King, Patricia Komuniecki, Donald Pierson, Jean Schaake; (missing from photo) Michael Morad, David Dyer.



Thank you!

Thank you to **Peiru Wu**, our newsletter editor. In addition to editing the NPSMA newsletter, Peiru has taken all the photos at every one of our National Conferences.

Thank you to **Jack Hite**, Deb Warren-Hite's husband. Jack attends our National Conferences to help with registration every year.

NPSMA appreciates its wonderful volunteers and thanks them for their time!



2015 NPSMA Board of Directors

We have a very committed and dedicated board in place for 2015.

President: Marilyn Wells, Provost and Senior Vice President for Academic Affairs, Minnesota State University, Mankato

Vice President: Deborah Silver, Executive Director, Professional Science Master's Program, Rutgers, The State University of New Jersey

Convener: Sheila Thomas, State University Dean for Extended and Continuing Education, California State University System

Finance Officer: Joaquin Carbonara, Professor of Mathematics, State University of New York, Buffalo State

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David Dyer, Director, Program for Applied Biotechnology Studies, California State University, Fullerton

Saeed Foroudastan, Associate Dean, College of Basic and Applied Sciences

Tara Johnson, Assistant Director, College of Graduate Studies, University of Central Florida

Carol Lynch, Dean Emerita, University of Colorado at Boulder

Ramona Mellott, Dean of the Graduate College, Northern Arizona University

Michael Morad, Senior Manager, Global Quality Compliance, Cordis Corporation

Donald Pierson, Vice Provost, Graduate School of Education, University of Massachusetts, Lowell

Linda Strausbaugh, Professor Emerita of Genetics and Genomics; Founding Director of Applied Genomics PSM University of Connecticut

Inge Wefes, Associate Dean of the Graduate School, University of Colorado Denver|Anschutz Medical Campus

Participate in PSM on the Hill Day: November 10, 2015

By Patricia H. McAllister, NPSMA Education Policy Consultant



In an effort to advance the PSM in the public policy arena, NPSMA is planning a **PSM on the Hill Day** in conjunction with the national conference in November. We would like to invite PSM directors who plan to attend this year's National Conference to participate in **PSM on the Hill Day** by making Capitol Hill and/or agency visits on Tuesday, November 10th to share information about the PSM and how it benefits their respective state/region. The current NPSMA public policy agenda is guided by the following beliefs:

- Awareness, recognition, and promotion of the role of the PSM in preparing the scientific workforce for national and global leadership in the 21st century knowledge-based economy should be increased.
- PSM opportunities and programs should be expanded for domestic students, particularly for underrepresented students.
- Appropriate resources for PSMs are the foundation for development of the future scientific workforce and leadership in STEM fields.
- Advocacy should to the extent possible be grounded in empirical research documenting outcomes and results associated with PSMs.
- Strategic collaborations with other stakeholders in higher education and STEM education including business, government, higher education associations, and science education associations will enhance the efficacy of the PSM public policy initiative.

To date, public policy efforts in Washington, DC have focused on the reauthorization of the *America COMPETES Act* and the reauthorization of the *Higher Education Act* (HEA).

The *COMPETES Reauthorization Act* of 2015, H.R. 1806, was passed by the U.S. House of Representatives on May 20. Among other things, the bill addresses graduate student support and directs the National Research Council to convene a workshop or roundtable discussion to examine models of Federal student support for STEM graduate students. The purpose of the workshop is to compare and evaluate the extent to which various models of support help to prepare graduate students for diverse careers utilizing STEM degrees. The workshop participants shall also produce recommendations concerning the appropriateness of creating a new education and training program for graduate students distinct from programs that provide direct financial support. The latter direct financial support programs include grants that were authorized in the 2010 *America COMPETES Act*, specifically Section 527, Twenty First Century Graduate Education programs that authorized the use of grant monies for the creation, improvement or expansion of innovative graduate programs such as science master's degree programs. The Senate has not yet released its version of the *COMPETES Reauthorization Act*.

The Reauthorization of the *Higher Education Act* (HEA) is underway. Title VII of the HEA authorizes graduate programs at the U.S. Department of Education including the GAANN program as well as International Education programs. Senator Lamar Alexander (R-TN), chair of the Senate Committee on Health, Pensions, Education and Labor (HELP), and ranking member Senator Patty Murray (D-WA) have formed bipartisan working groups to draft the reauthorization bill that will specifically address accreditation, accountability, affordability, financial aid, and sexual assault and safety.

Efforts are also underway on the House side and are focused on five main areas: empowering students to make informed decisions; improving and simplifying financial aid; promoting innovation; increasing access and completion; and enhancing accountability.

If you are interested in making some visits during **PSM on the Hill Day**, please contact Patricia McAllister (subject line: PSM Hill Day) at phmedu@msn.com.



Understanding Public Literacy: A Different Kind of Communication Skill

By Linda Strausbaugh, Professor Emerita, The University of Connecticut; NPSMA Board of Directors

Regardless of sector, a desirable skill set always identified by employers has been communication skills. Employers often emphasized not scientific or technical writing, but rather the ability to communicate effectively with persons who do not share the same expertise as the PSM graduate. The research, development, and production teams that PSM graduates will occupy are comprised of highly heterogeneous members. A scientific employee will interact with many persons spanning dissimilar backgrounds and proficiencies, such as management, public relations, manufacturing, marketing, sales, finance, and compliance. Moreover, the PSM graduate may be called upon to



participate in presentations for corporate leaders, boards of directors, politicians, and investors. Many in this target audience may have little formal training in science and present the same challenges as communicating with the public at large. While the traditional graduate program is adept at preparing its students to write scientific and technical documents, and to make scientific presentations, they do not typically include communication with the public as a priority.

This article presents an interactive and team-oriented workshop on public literacy based upon the National Science Board Science and Engineering Indicators, part of the national biennial effort to assess the level of scientific literacy of the public. Questions span astronomy, biology, chemistry, geology, and physical sciences, so the exercise is appropriate for most PSM programs. The workshop provides student participants with perspective on “What does the public know about science?” and “How do they learn this?” The activity may be conducted in existing communication courses or as a stand-alone activity. [Click here](#) to view a slide set for the workshop, complete with notes for the moderator.

We randomly divide participants into teams (4-8), and ask members to introduce themselves and select a team name. Each team receives a list of select SEI questions, and is asked to identify the one question they believe most members of the U.S. public have answered correctly. After all teams report selections, the correct answer and the percentage of correct respondents are announced. The entire group engages in discussion on how they think this particular bit of knowledge was gained. The “top knowledge” question is then removed and the process repeated and scores tallied until all questions have been considered. This activity allows

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Thinking Outside the Bench: Developing Innovation Skills of Professional Master's Students

By Harry Vardis, Lead Partner at Creative Focus, Inc., Atlanta, GA and Kevin Sightler, Southern Association of Colleges and Schools Commission on Colleges, Atlanta, GA; Founding and Former Director of the Illinois PSM at the University of Illinois at Urbana-Champaign

As directors of professional master's programs, what keeps you awake at night? Budgets, enrollments, recruiting, and internships? These are the nuts-and-bolts of running an academic program. But “how relevant is my program?” or “am I really preparing my graduates for what they need to thrive?” question the value proposition of professional master's programs.

Professional science master's (PSM) graduates need scientific knowledge plus skills to build trust, create, negotiate, persuade, and eventually innovate. PSM industry partners tell us graduates are scientifically proficient and business literate, yet would be better-served if they knew how to

- ask the right questions,
- blend with corporate cultures,
- feel comfortable in teams,
- listen,
- reframe problems, and
- think creatively and not just scientifically.

We've told our PSM students “DON'T BE SUCH A SCIENTIST,” borrowing scientist and filmmaker Greg Olson's plea for effective communication with non-scientist, such as the business people with whom PSM graduates work.

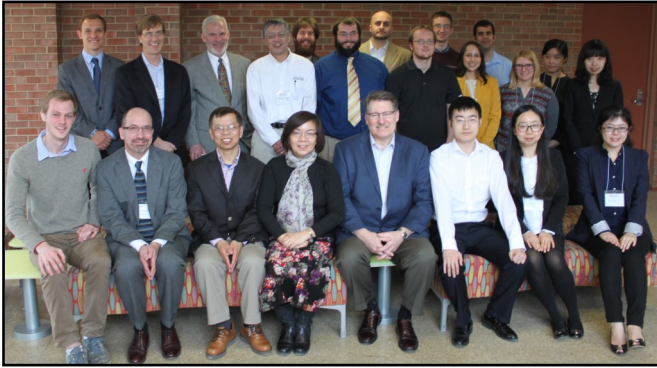
We've created a hands-on, intensive, and customizable course to help students do just that. Through this course, program directors add content when there is little curricular flexibility and/or when there's no capacity or expertise with the existing faculty. The course can be delivered in 2-1/2 to five days, depending on available time; the class is usually scheduled to include all-day weekend classes. The curriculum is built on well-established tools and techniques for hands-on active learning experiences that challenge students' perceptions and push them out of their comfort zone in a constructively supportive environment. Over 2,000 professional science master's and MBA students have taken the course at Anahuac University (México), Emory University, University of Illinois at Urbana-Champaign, Kennesaw State University, and Lake Forest Graduate School of Management.

Six months after the course, 95% of students say the recommend the course to others. The highest rated take-aways are:

- being more open to other people,
- developing leadership skills,
- doing a better job clarifying the correct problem,
- improving listening skills in conversations,
- thinking “outside the box,” and
- worrying less about others' criticism of ideas and actions.

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Over 15 Years of Industrial Sponsorship and Connections to Benefit PSM in Industrial Mathematics at MSU
Peiru Wu, Director of Professional Science Master's Program in Industrial Mathematics, Michigan State University



The MSU PSM in Industrial Mathematics program was designed from its inception by advisors from local industry since late 90s. One of our major successes is the strong connections with numerous companies in Michigan. It includes, for instance, active industrial advisory board to come for the annual Industrial Advisor Contact Day (IACD) event, regular spring industrial projects sponsorships every year, and industrial speakers to present in the American Mathematical Society (AMS) special session at MSU this spring.

The 2014 IACD was held on the campus last October. The students had mock interviews with the industrial advisors to the program from local companies such as Steelcase, Herman Miller, Auto-Owners, Chrysler, Consumers Energy, Ford Motor Credit,

Loan Science, and Jackson National Life. The board meeting for the industrial advisors with the department chair and program director was held before the mock interviews. The advisory board has been a valuable resource to support of the industrial mathematics program for 15 years. In spring semester of 2015, our student teams have successfully completed and delivered the industrial projects proposed by Badenoch, DisplayStar, Herman Miller, and United States Pharmacopeia. With no doubt soliciting projects and providing students industrial experience are the success of our program in addition to graduate placements.

In March 2015, MSU-AMS special session on “Mathematics in Industry and Industrial Problems with Mathematics Application” was organized by our industrial mathematics program. The industrial speakers from different industries such as United States Pharmacopeia (A Risk-Based Approach to Quality Control Testing of Pharmaceuticals in Emerging Markets), Chrysler (Better Fuel Economy Through Vibration Control), Ford Motor (Developing Effective Collection Strategy), Delphi (360 Surround View System with Parking Guidance), Steelcase (The Curse of Dimensionality in a Real Life Industrial Problem), Kodak (Liquid Transfer in Flexographic Printing), QED (Mathematical Methods as Applied to Landfill Gas Data), and Badenoch (Alternative Computational Methods for Optimization of Military Vehicles Design for Human Survivability and other Factors) gave the presentation talks in the session. The speakers are our important industrial connections and resources for many years. This MSU-AMS industrial mathematics session was very successful (see the picture taken on the MSU-AMS conference day).

Our program is one of the early flagship PSM programs in the U.S. It continues to flourish as a successful model to produce generalized problem solvers of great versatility, capable of moving within an organization, from task to task at industrial positions in their career paths.

Understanding Public Literacy:

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students to discover details about scientific literacy and allows the moderator to share additional demographic analysis from the survey.

In our program, we preceded the workshop by asking each student to write a very short letter to a member of Congress to advocate support for any scientific project. We often observed that students tended to use scientifically advanced vocabulary and assumed a level of understanding far beyond that of most non-scientists. After the public literacy workshop, we asked students to revisit their letters and share what they had learned with the rest of the group in a later session.

This experiential workshop is enjoyable (friendly competition), informative (scientific literacy), process-oriented (decision-making), and community-building (teamwork). Graduates better calibrated to public scientific literacy are better prepared to be productive members of heterogeneous teams in the workplace.

If your program conducts this workshop, please forward comments and suggestions for improvements to Linda.Strausbaugh@uconn.edu.

Thinking Outside the Bench:

(continued from Page 4)

What was the top-rated student suggestion for improvement? Offer the course as early as possible in their programs to make them better learners, team players, and prepared for internships.

A Wall Street Journal survey of CEOs revealed critical and creative thinkers, effective communicators, and team builders were the most-needed skills of the leadership class. We believe this course, supported by evidence, is a helpful step in preparing professional master's students for success.

For further information, contact Harry Vardis at vardis@mindspring.com; phone: 404-285-086 or Kevin Sightler at kevin.sightler@gmail.com; phone: 404-964-8344.

Using Social Media to Engage PSM Students

By Amy Dauernheim, Recruitment, Enrollment, and Retention Coordinator, College of Science, Illinois Institute of Technology

Since the creation of Facebook ten years ago, social media has steadily engrained itself in people’s daily lives. Whether you use it for personal reasons, or your business uses it for



marketing and communications, it is likely that you have had some exposure to one of the many social media platforms available today.

Nielson Online, which is an analytics firm that tracks time spent online at various websites, found that 79-99% of college students 25 and below

use social media, which indicates that colleges and universities definitely need to get on board with the social media movement. However, a lot of the PSM students at Illinois Institute of Technology, for example, are working professionals who have been out of college for years and don’t fit this demographic. Numerous other studies have shown that the fastest growing population of people using social media are 35 and up. In fact, more than 50% of all of Facebook’s members are among this group, according to the analytics company Pingdom. So whether your PSM students are more traditional-aged or not, you should have decent success at engaging PSM students of all ages through social media.

To track engagement, Facebook has an “Insights” page which provides insights to page managers about engagement on your page. This is helpful because tailoring brief messages around specific interests of your demographic will make a stronger impact than mass communications that don’t have audience focus. The Insights page helps you determine that focus by showing you who is clicking on what types of posts the most, at what times, etc. It allows you to see how many people each post reached, how many people “engaged,” which Facebook classifies as clicking on or “liking,” as well as more general stats, such as how many new people “liked” your page and engaged on a weekly basis.

LinkedIn, which is tailored more towards professionals for networking purposes, is a good tool for students who are close to finishing their program, or for recent grads. LinkedIn has a “Jobs” tab, which allows you to search for jobs based on preferences such as location, seniority, company size, and industry. You can apply to jobs directly through LinkedIn, track your applications, and be alerted when jobs that fit your search criteria become available. For this reason, among others, it may be a good idea to require students to create a LinkedIn profile, or update their existing one, as a part of their program.

These are just some highlights of the ways that you can use social media to engage your students. There are numerous other tactics as well as a variety of social networking sites that you can put to use in your programs. Do your research fore deciding on your strategy and be creative, and social media is sure to enhance your program.

NPSMA Awards

Each year at its National Conference held in November, NPSMA presents awards to outstanding members of the PSM community. Nominations for awards are accepted throughout the year. For more information, go to <http://www.npsma.org/awards>.

The 2014 award recipients were honored in Atlanta, GA last November:

Board of Directors Award:
Rana Kahn, University of Maryland University College

Board of Directors Award:
Gerald Santoro, Pennsylvania State University

President’s Award:
Donald Langenberg, University System of Maryland (retired)

Advisory Board Award:
Ross Grossman, Regeneron (retired)

NPSMA Social Media and Job Board

Look for NPSMA on Facebook, Twitter, and LinkedIn. Click on icons located on left side of website’s home page.

Did you know that NPSMA has a Job Board on its website? Look on right side of website’s home page and click on Career Center.

Alum Testimonial

**Cody Dean, Michigan State University, 2010
PSM Industrial Mathematics
Occupation: Sr. Business Intelligence Analyst -
Amway Corporation**



“I graduated from Michigan State University’s PSM program in Industrial Mathematics in May 2010 and joined Amway in July 2010. The group that I came into at Amway had physicists, electrical and computer engineers, and bio-chemists, to name a few, and needless to say the group was extremely diverse. By allowing me to take graduate level classes in so many different disciplines, the Industrial Mathematics program made me a very well-rounded employee capable of collaborating with these individuals right out of the gate. I was able to effectively communicate with each discipline and the learning curve to get caught up to speed was quite low. Now that I have been with the company for 5 years, the mathematical and statistical background that I developed at MSU has put me in a role where people routinely seek me out for my expertise. I think one of the most beneficial pieces of the program was the business training that we received. I can effectively communicate my ideas to others in different areas of the company and I am constantly praised for my communication and presentation abilities. My experience in the Industrial Mathematics program at MSU helped me land a career that I absolutely love.”

Congratulations to Middle Tennessee State University MS-PS Students

By Saeed Foroudastan, Associate Dean, College of Basic and Applied Sciences, Director of Master of Science in Professional Science Graduate Program, Middle Tennessee State University ; NPSMA Board of Directors

Eighteen students in the Master of Science in Professional Science (MS-PS) program presented details of their internship experiences on Thursday, April 30th in the MTSU Science Building. MS-PS is a PSM degree. The graduate students completed a variety of projects within public and private business enterprises, government organizations and academia. Faculty, students, internship sponsors and other supporters were in attendance.

MS-PS offers concentrations in Actuarial Science, Biostatistics, Biotechnology, Engineering Management, Geosciences and Healthcare Informatics. Under the direction of Dr. Saeed Foroudastan, Associate Dean of the College of Basic and Applied Sciences, the program is growing steadily with 54 graduates in 2014.

Spring 2015 internship sponsors included Encapsula NanoSciences, Vi-Jon, Inc., Advanced Breath Diagnostics, Sarah Cannon Research Institute, Community Health Systems, Hospital Corporation of America, Sigma Actuarial Consulting, the MTSU Department of Biology, Tennessee Department of Health, Tennessee Center for Dyslexia, Tennessee Valley Healthcare System VA, Rutherford County Property Assessor, Nashville Area Metropolitan Planning Organization, Middle Tennessee Museum, and Nashville Electric Service.

The MS-PS internship presentations are held at the end of each semester. Mark your calendar for upcoming semesters: Summer 2015 presentations will be held August 6; Fall 2015 presentations will be held December 3. To learn more about the program, visit www.mtsu.edu/msps.



(Photo left to right 1st row) Gheda Alsaf (Biotechnology), Kimberly Page (Actuarial Science), Yingxiao Huang (Biostatistics); (2nd row) Rehaam Alslami (Biotechnology), Dr. Saeed Foroudastan, Program Director; (3rd row) Mary Beth Stephens (Geosciences), Brittany Jackson (Geosciences); (4th row) Tawanda Marume (Biostatistics), Kelsie Krantz (Healthcare Informatics), King Balla (Healthcare Informatics), Eugenie Valerie Kamgue (Geosciences); (5th row) Inhwa Kim (Biostatistics), Jozeph Abdelmasseh (Biotechnology), Allison Phillips (Biotechnology), Bhavnisha Patel (Healthcare Informatics); (6th row) Stephen Porch (Geosciences), Manal Alghamdi (Biotechnology), Britnee Garner (Biotechnology). (missing from photo) Tiffany Gross (Healthcare Informatics).

NPSMA Executive Committee and Staff

- President: Marilyn Wells (Minnesota State University, Mankato)
- Vice President: Deborah Silver (Rutgers University)
- Convener: Sheila Thomas (California State University)
- Finance Officer: Joaquin Carbonara (SUNY Buffalo State)
- Immediate Past President: David King (SUNY Oswego)
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Newsletter

Editor: Peiru Wu
Layout and Design: Debra Warren-Hite

The Voice of the PSM is published periodically throughout the year by the NPSMA. Send newsletter submissions to coordinator@npsma.org. This newsletter serves as a venue for NPSMA members to make program announcements and attract national visibility. To receive full benefits and best practices advice for new programs, we encourage you to join the NPSMA.

Rebate Program for NPSMA Memberships Ending

The Alfred P. Sloan Foundation awarded the PSM Office at the Keck Graduate Institute (KGI) funding for a rebate program that provides membership dues rebates for **new** institutional members of the National Professional Science Master's Association. This rebate program is not dependent upon your application for PSM affiliation with the PSM office at KGI.

If your university would like to take advantage of the rebate program between now and **October 31**, you will be reimbursed 25% of the NPSMA membership fee. The rebate program works as follows:

- University joins the NPSMA for one year (\$2,000).
- University completes rebate form and W9 to send to KGI along with NPSMA membership receipt.
- KGI reimburses the university 25% of membership fee.

Download the rebate form and W9 [here](#). Join the NPSMA [here](#) or print the form on the last page of this newsletter. If you would like a NPSMA membership invoice to be sent to you, please contact Debra Warren-Hite: admin@npsma.org.



Invoice For Annual Membership Dues

(The NPSMA is a 501(c)(3) Nonprofit Organization; Tax ID # 20-8766099)

Please Check Appropriate Membership:

New **Renewal**

- Academic Institution** (1 contact per PSM program) \$2,000
- Academic System** (minimum of six campuses) \$1,500/campus
- Individual** \$ 75
(if you are a Program Director whose program has undergone the affiliation process through the PSM National Office at KGI – 1st year NPSMA membership is complimentary)
- PSM Alum** \$ 75
(if you are an Alum of an institution whose program has undergone the affiliation process through the PSM National Office at KGI or if your institution is an Academic Institution member of the NPSMA – 1st year NPSMA membership is complimentary)
- Student currently enrolled in PSM degree program** \$ 50
(if your institution is an Academic Institution member of the NPSMA – 1st year NPSMA membership is complimentary; 2nd year \$25)

Please make payments to the National Professional Science Master’s Association.

Mail form with check to: NPSMA, P.O. Box 3455, Riverview, FL 33568-3455
To pay online, go to www.npsma.org. Thank you for your membership!

Please Provide Information Below

If taking advantage of complimentary membership, please choose one:

Program is affiliated through PSM National Office of KGI. Institution is NPSMA member.

Name and Title of Individual, PSM, or Student Member (or contact for institutional membership)

Program _____

Academic Institution _____

University System (if applicable) _____

Email _____ Phone _____

Address _____

City, State, Zip _____