Growth Agenda for Wisconsin Grant Program
2013-14 Annual Report

Please submit the annual report as a Word document to our office via email to bjokisch@uwsa.edu (no hard copies please). The annual report is due on Friday, February 21, 2014. The following information must be provided:

Institution Name: UWM
Project Title: Establishing a Student Innovation and Entrepreneurship Program at UWM
Principal Investigator: Dr. I. Avdeev  Person submitting report: Dr. I. Avdeev
Email: avdeev@uwm.edu Phone Number: (414) 510-3631
Grant Amount: $274,652 Report Date: 4/16/2014
Date project began: 07/01/2013 Date project ends (planned): 07/01/2016

I. Status Report
Describe the extent to which the project met its mileposts to date. Discuss project activities in relation to meeting the proposal’s expected outcomes. Please include any activities related to dissemination and sustainability if appropriate at this time.

Validation Phase – Creating a Platform for Growth (Year-1)

We have proposed to execute the following tasks in the first year of the project:

A. Launch a campus-wide call for student innovative ideas with an emphasis on multidisciplinary student teams and projects (Spring ’13).
B. Organize and launch two new tracks: Clean Energy and Software/Mobile Challenges (Summer ’13).
C. Develop and launch eight new student ventures (4 hardware/4 software) through integration of prototyping, business model development, and commercialization resources (Spring ’14).
D. Identify critical curriculum gaps and initiate new curricular development at UWM (Spring ’14).

Milestones/Outcomes:

1. UWM Student Startup Challenge website and portal redesign (January – March, 2013). The redesigned program website has allowed us to gather more information about student teams and to create a community of collaborators (Task A).

   Link: www.uwmstartupchallenge.com

2. A campus-wide call for student innovative ideas was launched in April 2013. By June 2013, we have received 60 ideas (Task A).

3. Review of student idea submissions (June-August, 2013):

   • After the initial screening of 60 idea submissions, 23 hardware product proposals (including clean water and energy proposals) and 24 software/mobile-app proposals were reviewed by a panel of 32 external reviewers: three to seven reviewers per submission (Task B).
• 15 finalist teams were invited to pitch their ideas in front of the panel of judges from the industry, academia and community leaders.
• Eight student teams were selected for funding (four awards of $5,000 and four awards of $10,000 each, total: $60,000) and admitted to the UWM Student Startup Challenge (Task C).
• See Appendix for more information about the winning eight.

4. The winning cohort participated in the following events:
   • Freshman class Fall Welcome Event (recruitment/retention)
   • UWM Student Startup Challenge Award Ceremony
   • UWM Research Foundation Fall Boot Camp: Customer Discovery
   • UWM Research Foundation Booster Event: Intellectual Property
   • UWM Research Foundation Spring Boot Camp: Deliverables
   • UWM Chancellor’s Society Reception (fundraising)

5. UWM Student Startup Challenge teams have exposed more than 200 students to their products and activities through the following experiential learning courses at UWM:
   a. Product Realization
   b. Innovation and Commercialization
   c. Entrepreneurship: New Venture Creation
   d. Graphics Design II

A new freshman course promoting entrepreneurship and innovation is being developed by Professor Satish Nambisan (Engineering/Business) with the goal to be launched in the Fall 2014.
Dissemination:

- UWM Student Startup Challenge Facebook page:  
  https://www.facebook.com/UWMStudentStartupChallenge
- “Students & Startups: UWM Shows You How:”  
  http://www4.uwm.edu/startupchallenge.cfm
- “2014 New Venture Business Plan Competition Winners Announced:”  
- “Pathways to Innovation program spreading entrepreneurship education,” by Kylie Jue, The Stanford Daily, 03/03/2014:  
  http://www.stanforddaily.com/2014/03/03/pathways-to-innovation-program-spreading-entrepreneurship-education/
- “How to teach innovation UWM style,” by Laura Hunt, 2014 UWM Research Report:  
  http://www5.uwm.edu/researchreport/2014/01/14/how-to-teach-innovation-uwm-style/
- “Quest: Owning a business while still in college,” by Laura Hunt, 2014 UWM Research Report:  
  http://www5.uwm.edu/researchreport/2014/01/14/quest-owning-a-business-while-still-in-college/
- “Slow Innovation,” TEDx Milwaukee Presentation, May 2013 (I. Avdeev and N. Stern):  
  Event website: http://www.tedx-milwaukee.com/presenters/  
  Video: http://www.youtube.com/watch?v=uqOVWNmMRIk
- “The Student Startup Challenge,” Radio Interview: Ilya Avdeev & Tom Luljak, UWUM: Milwaukee Public Radio, 1/17/2013:  
- “UWM program aims to create entrepreneurial students,” by Dan Shafer, BizTimes Milwaukee, 12/16/2013:  
  http://www.biztimes.com/article/20131216/MAGAZINE03/312139986/0/SEARCH

Sustainability:

During the first year of the project, we have applied and were awarded several new internal and external grants supporting and expanding UWM Student Startup Challenge program:

1. UWM’s School of Information Sciences: annual student team support for four mobile applications – software SSC track, $20,000, August 2013 – August 2014 (internal).
2. I. Avdeev (PI), N. Stern (co-PI) and B. Thompson (co-PI) “Establishing a Technology Entrepreneurship Program at UW-Milwaukee,” National Collegiate Inventors and Innovators Alliance (NCIIA), $35,000, March 2013 – April 2015 (external).

In addition, UWM was invited to join two collaborative programs sponsored by National Science Foundation (grant number DUE-1125457) and coordinated by Stanford University’s Epicenter (National
Center for Engineering Pathways to Innovation) and National Collegiate Inventors and Innovators Alliance, granting UWM student fellowships and student/faculty travel awards:


One of the UWM Student Startup Challenge winners, Alex Francis (M.S. Student, Mechanical Engineering), has received three additional seed awards in support of his company – Isopoint Technologies, LLC:

- University Innovation Fellowship, NSF / Epicenter / NCIIA, $2,000 (February 2014).
- Collegiate Entrepreneurial Organization (CEO) Quick Pitch Competition Second Prize, $300 (April 2014).

In addition, a collaborative research grant between Isopoint Technologies, Department of Chemistry and Department of Mechanical Engineering advancing the core Isopoint product (E-Trap) has been recently awarded:

Isopoint recently completed an option agreement with the UWM Research Foundation for related technologies.

- Other prizes and grants awarded to the winners of the UWM Student Startup Challenge:
  - Kyle Ilenda and Spencer Johnson (LEVEL Camera Products):
    - UWM Lubar School of Business: New Venture Business Plan Competition Third Prize, $2,000 (March 2014).
    - CEO Student Entrepreneur of the Year Award (April 2014).
  - Hunter Ruth and Josh Kirk (Abakus: Education Adventure):
    - UWM Lubar School of Business: New Venture Business Plan Competition Second Prize, $5,000 (March 2014).
  - Andrew McConville, William Barlas, Kyle Forsberg and Max Felgenhauer (MESMER):
    - UWM Lubar School of Business: New Venture Business Plan Competition Third Prize, $2,000 (March 2014).

II. Assessment Plan
Attach the current assessment plan for the project. If there were any changes in the project activities, outcomes or evaluation, they should be identified in this plan. Discuss any key findings and how the institution used collected data to improve the project.

The program will help create innovative products and launch high-growth companies, but the most important output will be a steady stream of entrepreneurial-minded and innovative students who will thrive in challenging environments. The program will touch students on many levels to create that pipeline of talent; students in the program will be asked to think about businesses and define their ideas in business terms, and students selected as project sponsors will lead teams and create businesses. The important linkages with other academic programs will allow UWM-SSC to reach additional groups as the project teams in key UWM courses will help contribute to the launch of real-world companies. These students and others may join with project sponsors to create the business team that will eventually launch the company. The program will be assessed on several quantifiable outcomes: (1) the number of student ideas submitted, (2) the number of projects supported, (3) the number of companies launched, (4) the number of jobs created, and (5) the impact of the new companies and products on the local economy. The program will also be assessed on how it changes the innovation culture at UWM through the number of schools and colleges that engage in and support the program and the number of courses that are developed to support the proposed activities.
Assessment:
- Number of ideas submitted: 60
- Number of startups supported: 8
- Number of companies launched: 2 (Isopoint Technologies, LLCA and LEVEL Camera Products)
- Number of jobs created – approximately 12 individuals are working in these enterprises

III. Expenditures
Please provide a report of project expenditures detailed by category and source of funds.

Table 1: Expenditures for Year-1 of the project (07/01/2014 – 06/30/2014) on April 10, 2014

<table>
<thead>
<tr>
<th>Category</th>
<th>Budget</th>
<th>Actual</th>
<th>Balance</th>
<th>% Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty/Staff</td>
<td>$34,472</td>
<td>$27,443</td>
<td>$7,029</td>
<td>79.61</td>
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<tr>
<td>Student employees</td>
<td>$7,488</td>
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<tr>
<td>Other promotional materials</td>
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<td>$2,699</td>
<td>$2,301</td>
<td>53.98</td>
</tr>
<tr>
<td>Annual Entrepreneurial Symposium</td>
<td>$2,000</td>
<td>$0</td>
<td>$2,000</td>
<td>00.00</td>
</tr>
<tr>
<td>Student Team Grants (startup challenge awards)</td>
<td>$60,000</td>
<td>$26,083</td>
<td>$33,917</td>
<td>43.47</td>
</tr>
</tbody>
</table>

**TOTAL:** $108,960 | $60,719 | $48,241 | 55.73

IV. Changes
Describe any additional changes (staff, program direction, etc).

Staff:
The project leadership team has expanded through addition of several key members:
- Michael Hostad, Director of Mobile Strategy – mobile/software track co-founder
- Dr. Carlton Reeves, Entrepreneur-in-Residence, UWM Research Foundation
- Tyra McFarland, Project Manager (undergraduate student)
- Allison Pfeil, Graphics Designer

Program Direction:
- The success of first year, especially in attracting new funding, has allowed us to have more resources available for student team support in the following two years. More teams will be sponsored pending sufficient number of valuable submissions and ideas.

V. Benefits of Continued Funding
Describe the benefits of continuing funding for the project based on the results and findings of project to date.

The continuing funding of the project will allow us to execute the *Scale-up phase* of the project plan. Ultimately, our objective is to scale up the program so ten or more student ventures will launch each year.
It is only at this level that UWM students can begin to infuse growth within the local economy by cultivating multiple sources of support, including the university, industry, donors, and local and state governments. We are creating a “franchise model” that encourages new tracks in a number of areas – for example, the software challenge organized by the Schools of Information Studies.

Specific milestones of the Scale-up phase are:

A. Identify new partnerships towards a multi-institutional model.
B. Develop new challenges/tracks through partnerships with local industry and government.
C. Have one highly successful company launch to serve as a ‘poster-child’ for the program.
D. Work with local, state, and federal agencies and the Milwaukee venture capital communities to obtain several million dollars of support to institutionalize the program.
APPENDIX
2013-2014 UWM Student Startup Challenge Winning Teams

The UWM Student Startup Challenge has selected winning product/software student teams for funding in 2013-2014 round of competition. Thanks to the addition of a software track and a successful first year, the number of winners increased from three overall teams to eight (four hardware products and four software applications). The following are this year’s winners:

**PRODUCTS**

**LEVEL CAMERA PRODUCTS**
Kyle Ilendza imagines that LEVEL Camera Products will allow video freelancers and starting cinematographers to shoot unique and crisp shots that normally break the bank. These products fill a niche of high quality, portable camera mounting systems that are significantly more affordable than those currently on the market.

**AUGMENT-H**
Scott Johannes and Katrina Cannaveau lead a group of physical therapy students who noticed a lack of recorded, trackable data on individuals with lower back pain. With a fusion of hardware worn by the patient and data recording software analyzed by the physical therapist, Augment-H is taking steps toward proper back mechanics can become a much easier task.

**ELECTROSTATIC PARTICLE TRAP (E-TRAP)**
Mechanical Engineering graduate student Alex Francis hopes to develop a product that confines a single cell in order to view and analyze it individually through a microscope. He hopes that his method can surpass similar yet glitchy products already in use but with higher efficiency. The product would be based on patented technology developed by UWM researchers, Jerg Woehl.

**AQUASENSOR DEVICE**
Aquatic scientists Tom Hansen and Marcia Silva plan to fuse hardware and software together in hopes to help lower the cost and turn-around time for products that detect bacteria and E. coli in our waters. Their handheld device will be designed to work on smart phones or tablets and to be easy to use.

**SOFTWARE**

**MESMER**
Computer guru Andrew McConville had enough with the hectic means of setting up classes through campus’ current online platform. The functions to drag, drop, see recommendations, switch, and delete are simple with his efficient and easy-to-use design.

**ABAKUS: EDUCATION ADVENTURE**
Designers Hunter Ruth and Josh Kirk hope that Abakus will close the gap between elementary students and their teachers and/or parents. The space-themed adventure game is based on educational standards and tracks the child’s progress. It then immediately delivers comprehensive progress reports back to his or her respective monitors.

**AGOCO NETWORK**
Nigerian native Ogechi Chidisell dreams of harnessing the rapidly growing online community in Nigeria and West Africa in order to track and collect demographic information from emerging nations. Similar to Yelp! or FourSquare, this application will aid customers, business owners, and researchers in data collection and social interaction.

**SALE COUP.PAIR**
Coupon connoisseur and graduate student Andrea Pasqualetto dreams of an application that condenses binders full of clipped coupons into one easy storage system on one’s smart phone or tablet. Users will be able to use, record, and track their coupons all while keeping money in their pocket.

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1 Source: [http://www4.uwm.edu/startupchallenge.cfm](http://www4.uwm.edu/startupchallenge.cfm)
Agogo Network
Ogechi Chidebell: graduate student, business

When Ogechi Chidebell arrived in Milwaukee in 2011, she relied heavily on her smart phone to get to know the city. “Even though I didn’t know my way around, I could walk downtown and wouldn’t feel lost,” says Chidebell, a Lubar Executive MBA (EMBA) student from Nigeria. “I didn’t have to feel like an outsider in Wisconsin.” She navigated with Google maps, and chose restaurants, coffee shops and other small businesses based on online review sites like Yelp.

“And I realized that this information is something that Nigerians don’t have,” Chidebell says. In fact, she says, many small businesses in Nigeria never appear in Google searches. That realization inspired her winning entry in the Student Startup Challenge (SSC), an app called Agogo Network. Named for the agogo, a gong-like instrument used in ancient Nigeria to announce important events, Chidebell’s platform would provide listings and reviews for restaurants, tailors and beauty salons, as well as events and entertainment. “It’s creating a Yelp for Nigeria,” Chidebell says. While taking a UWM course called IT Infrastructure, she learned that Google search results are based on back-links to existing web pages. Few Nigerian small business owners can afford websites, Chidebell says. Yet Nigeria currently has one of the biggest telecommunications industries in the world.

“We do not have access to the Internet, but most people have mobile phones,” Chidebell says. “Of 117 million Nigerians, at least 100 million have one sort of smart phone or another.” Once Nigerians start using their phones to weigh in on Agogo about where they like to eat, shop, and have their clothes tailored, Chidebell sees an opportunity to gather previously uncollected consumer data. Small business owners could benefit from the connection with customers who are looking for them. Chidebell hopes this gold mine of previously untapped information could help the Nigerian economy in larger ways too. “Marketing data will spur innovation and attract foreign investment,” she explains. “It will give the Nigerian consumer a face so that local and foreign business can better meet their needs.” Chidebell says she is drawn to the startup process, particularly innovative ideas that can help her home continent. “My heart has always been strong for Africa,” she says. “I always knew I wanted to be a bridge between the Western world and emerging nations, Africa in particular. I just didn’t know to what extent. One thing the Student Startup Challenge did was open my eyes that I really could do something that would change the lives of people.”

Chidebell says a highlight of the SSC process has been working with the team at UWM’s Mobile Innovation Lab, nicknamed the App Brewery. The student workers there are currently working with her to build a prototype. Once she has a working framework, Chidebell and her collaborators plan to approach potential investors, including telecommunications firms in Nigeria.

Chidebell remembers the day when she pitched Agogo Network to the SSC judges. She says that as she made her presentation, she suddenly realized that others could visualize what she was proposing. “In the end it didn’t matter whether I won it or not,” she says. “What mattered was the fact that people were able to see something that I saw, to see a reality and a possibility.”

Update: Once the app is completed, Chidebell will be taking a job in Nigeria with a television production company. In December she got her first chance to network: Through an introduction from Chukuka Enwemeka, dean of UWM’s College of Health Sciences, Chidebell meet former Nigerian president Chief Olusegun Obasanjo who was visiting the campus. She hopes to make more connections in her native country for investors and others interested in her product, while planning to keep the technical operation and hosting in the U.S.
Bacterial Aqua Sensor
Tom Hansen: alumnus, computer science; graduate student, freshwater sciences
Marcia Silva: alumna, environmental engineering

A casual chat among colleagues at the School of Freshwater Sciences (SFS) turned into an idea for a portable and inexpensive sensor that quickly detects bacteria in water. Doctoral student Tom Hansen and recent alumna Marcia Silva remember talking about the value of such a device, but not with the intent of acting on it. But then the pair heard Dean David Garman and Distinguished Professor Rudi Strickler also talking about the need for such a tool. “All four of us had the same idea,” says Silva. “It just didn’t happen on the same day or in one discussion.”

Using a laser beam produced by a laser pointer and a sensor similar to one found in a cell phone camera, their device works by creating a holographic image of particles found in a water sample. The laser’s light waves pass through the sample and scatter off a photographic plate behind it. But the waves also bounce off of particles in the water, creating an interference pattern. Software powered by a computer no bigger than the palm of your hand, which Hansen ordered online, translates interference patterns into a 3D image. Each partner in this team has brought an expertise to bear. Silva’s doctoral degree is in environmental engineering and her dissertation involved modeling the transport of bacteria on beaches. The research gave her experience in image processing of bacteria tagged with florescent markers.

As the information technology-processing consultant at the school, Hansen has been involved in creating or modifying equipment that makes wireless data collection on the Lake Michigan possible. The creative environment of the workplace brought them together. Silva came to UWM to attend graduate school from her hometown of Porto Alegre on the southern-most tip of Brazil. Hansen is all Milwaukee. Four engineering students enrolled in the course Product Realization assist on the design and construction of software and hardware needed in the final prototype. The team has the additional benefit of six Lubar School of Business students who are working on a marketing plan for the aqua sensor as part of their for-credit entrepreneurship course.

The team already has a testing prototype, but much work remains. Their prototype, for example, cost nearly $200 to assemble. But for it to be mass-produced, says Hansen, they will have to reduce the cost of producing the device to around $50. The team currently has submitted the device through the “Product Realization” course a second time to further hone its sensitivity and reduce it size. Meanwhile, the UWM Research Foundation is actively exploring intellectual property protection for it.

“I’m confident we can be successful in that it can find bacteria in clean water,” says Silva. “What is unknown is whether it can work in water from the field that will have lots of material in it.” The team is using a microfluidic technique to concentrate the bacterial in a field water sample that might contain a plethora of matter and organisms. Important to the pair is that any claims they make about the sensor’s capabilities be proven, so they are taking a scientific approach. Hansen, who was fascinated with creating gadgetry even as a child, says one perk of working in an academic environment is that ideas can present themselves while you’re involved in an unrelated research project, as this one did. But, he says, he would also like to be able to create products for the market. “Who knows where this thing might take us? But I don’t want the sensor to just exist. I want to take it to the next level.”
Update:
The team is talking with two potential collaborators who can help identify uses for the device in the medical field. They also have been approached by a company about licensing the product once it’s completed.

Augment-H
Scott Johannes, Katrina Carriveau, Jackie Beranek, Marie Wavrunek, Heather Tomeo, Ying Xiong: graduate students, physical therapy

When Scott Johannes learned that a staggering $50 billion is spent every year to treat back pain in the United States, the physical therapy doctoral student saw an opportunity. “Back pain sufferers are one of the largest groups of patients seeking physical therapy services today,” Johannes says. So he began to imagine a device that would streamline treatment. Back pain patients would wear this device for several hours or days while it collects data about their body movements, pinpointing postures and movements that trigger pain.

In 2012, Johannes entered an early version of this idea in UWM’s very first Student Startup Challenge (SSC). His idea ranked among the top 10 ideas in the competition, but he didn’t receive funding, so Johannes went back to the proverbial drawing board. He convinced his professor and classmates in the College of Health Sciences’ physical therapy research practicum to adopt his device as one of the class projects. The group brainstormed ideas about how to improve it, and ran a small study to see if those ideas might work.

That same semester, Johannes, a veteran of the U.S. Air Force, entered a business accelerator program designed to help veterans become entrepreneurs. Known as Vetransfer, the program put him in touch with clinicians who critiqued the idea, and mentors who provided supportive coaching. By the end of the semester and the stint with Vetransfer, five of his fellow physical therapy doctoral candidates agreed to join Johannes in moving the product forward: Katrina Carriveau, Jackie Beranek, Marie Wavrunek, Heather Tomeo and Ying Xiong. The team successfully entered their device – known as Augment-H, for “Augment-Human” – in this year’s SSC. They’re currently developing a prototype with the help of UWM students in the engineering “Product Realization” class. The Augment-H team manages to meet in person about once a month, usually at Johannes’ apartment near campus. The rest of the month they stay in touch with project management software and email. The launch process takes energy and focus, and these students are already busy working toward their degrees. “Since starting work on this project, I’ve become addicted to espresso drinks,” Carriveau says. Johannes is grateful for his caffeinated colleagues. “There’s no way I could do this thing on my own,” he says. “You need friends in the process, people to go through the sweat equity with you.” He also feels that his professors have fostered the team’s entrepreneurial instincts. “The physical therapy faculty is very good at challenging us, and instilling in us that we’re supposed to be pushing the envelope,” Johannes says. “We’re supposed to be the champions of things like this.” Five specialists in physical therapy, designing such equipment
without an engineering hand was “an uphill learning curve,” says Johannes. “You just have to have the interest and drive.”

**Update:** The team is now looking at ways to improve the prototype by looking at what competitors are offering. They have contracted with an electrical engineer to suggest alternate designs for the posture sensors on their device.

**Abakus: Education Adventure**
Hunter Ruth: alumnus, design and visual communication
Josh Kirk: alumnus, business management, MATC

When Hunter Ruth thinks way back to his elementary school days, he remembers some struggle. “I was an advanced elementary school student, but it was almost too easy,” the UWM graduate recalls. “I got bored really quickly.”
What really held his interest, though, were video games. Pokémon in particular captured his imagination, and he played for hours on end. “I always appreciated the spontaneity of Pokémon,” Ruth says. “Traveling through tall grass, or in a dark cave, you never really knew what you’d have to fight next.”
Shortly before Ruth graduated with his degree in design and visual communication from UWM, he took a graphic design course that requires students to think like entrepreneurs and design a new product. Ruth immediately thought back to his experience in elementary school, and to discussions he’d had with his mother and sister, who are both teachers in Minnesota.

“I wanted to introduce a more engaging learning experience, one that didn’t get old for students who weren’t challenged,” he says. Abakus: Education Adventure was born. It’s a video game that combines state-standard class work in mathematics for elementary school students with the allure of space-themed gaming. As children solve math problems and advance through the levels of the game, they unlock parts to upgrade their spaceship. Eventually the ship blasts off, and visits other planets, getting bits of information about the Solar System along the way.

While he was designing a prototype of Abakus for his graphic design class, Ruth also began writing code for the game in an information studies class taught by Quinn Madson, lead developer for UWM’s Mobile Innovation Lab, known as the “App Brewery.” Ruth convinced Madson to work with him on an independent study; as a result, three of his five courses that semester involved work on Abakus. At the same time, Ruth’s best friend and roommate, Josh Kirk, was studying at MATC for a diploma in entrepreneurship, and he devoted his central project to developing business aspects of Abakus. The friends’ skill sets blend so well that a partnership “just seemed like the right thing to do,” Kirk says. Before the semester was up, Ruth and Kirk decided to enter Abakus into UWM’s Student Startup Challenge (SSC). At the same time, students at the App Brewery are helping them rebuild and enhance the app. The pair is grateful for the help. Ruth works full time at the Milwaukee-based digital agency Northern Ground, and Kirk is pursuing a computer science degree at MATC while also serving as a consultant at the school’s Entrepreneurship Center.

Once the prototype is complete, Ruth and Kirk will seek investors and partner with elementary schools to test Abakus. Ruth’s mom and sister in Minnesota hope to test his product with their own students. “The initial reviews will be our bread and butter,” says Kirk. “It will get us into schools that don’t know about us.”

**Update:** The prototype is nearly done and then the team will be ready to get feedback from educators and children. The team recently took second place in the New Ventures Business Plan Competition, sponsored by the Lubar School of Business and La Macchia Enterprises, winning $3,500. Plans call for getting it into the App Store and expanding to other platforms as soon as the mobile version is done.
Sale Cou.pair
Andrea Pasqualetto: EMBA student

Andrea Pasqualetto grew up in a household where frugality was practiced as an art form. Her mother is a connoisseur of rummage sales and second-hand stores. So it wasn’t too surprising that soon after getting married and starting her own household Pasqualetto began clipping coupons. Now she has turned her personal passion for coupons into a promising business venture. Pasqualetto, a student in the Executive MBA (EMBA) program in UWM’s Lubar School of Business, created an app known as Sale Cou.pair that combines information about bargains at local supermarkets with digital coupons so shoppers save time and maximize savings. And instead of giving cashiers a handful of paper coupons, Sale Cou.pair users show them a single bar code on their smart phone.

Over time, Pasqualetto had refined the organization of her paper coupons, even making an Excel spreadsheet that listed each one to ensure she used them before they expired. “Eventually I got hooked on the savings and took couponing to the next level by pairing coupons with sale items, and from there it just became a lifestyle,” she says. “I was going to give up couponing when I started in the EMBA program, but I couldn’t. Saving money is just too addicting.” When friends asked Pasqualetto to share her money-saving secrets, she taught several of them her method. But she discovered they lacked the time to keep the coupons organized. So when she took a marketing strategy course where she had to dream up a business idea and develop its marketing plan, she proposed an app that would improve on her paper system of couponing. “Once I started presenting it to the rest of the class, I couldn’t believe how many people encouraged me to move forward with it,” she says. Her classmates’ enthusiasm pushed her to apply to the Student Startup Challenge (SSC). “I’m constantly blown away by the knowledge and the support the SSC gives you to make your idea a reality,” she says. “The networking has been more valuable than the money I won.”

As a business student who works full-time in real estate, Pasqualetto feels more confident about the business aspects of launching Sale Cou.pair. But designing an app is a different story, and she’s grateful for the expertise of the developers at the UWM App Brewery, who are working to build a prototype. When it’s ready, Michael Hostad, director of UWM’s Web and Mobile Strategy, will partner with Pasqualetto to pitch Sale Cou.pair to grocery store chains, coupon manufacturers and potential investors. Retailers and coupon manufacturers would have much to gain from the system, Pasqualetto says. Paper coupons are a pain for supermarkets: cashiers sometimes lose them, and stores must fill them out and mail them to the manufacturer for reimbursement. “Sale cou.pair is going to digitize that whole process so retailers get their funds faster,” she says. And product manufacturers and coupon companies will get more control over the number of coupons issued. With Pasqualetto’s system, coupons can’t be copied illegally, and would be deleted from the Sale Cou.pair account once they’re used. Pasqualetto is excited about where her idea might lead her, and maybe even a little surprised. “Sale Cou.pair was really just an idea when I entered the Student Startup Challenge,” she says. “Now I’m actually thinking it could be a real thing.”

Update: The product itself has been designed to look like it “belongs” to the individual store using her system, and can be customized to reflect each store’s priorities. Pasqualetto was invited by the Wisconsin Angel Network to participate in its elevator pitch event, where she won the People’s Choice Award. She also has had some interest from a Midwest chain of grocery stores. Customer development will pick up as soon as the prototype is completed in the App Brewery.
**Electrostatic Particle Trap (E-Trap)**  
*Alex Francis: Graduate student, mechanical engineering*

Alex Francis thought he knew where his life was headed career-wise. He imagined earning his undergrad and graduate degrees in mechanical engineering, and then working in industry. Period. But an experience at UWM has opened his eyes to a whole new range of possibilities. “I was looking for courses I could enroll in where I could apply my ideas,” says the mechanical engineering graduate student. He heard about Student Startup Challenge (SSC) by taking “Innovation and Commercialization,” in which student teams develop business plans for actual products.

Francis won the SSC with an idea for an electrostatic trap called “E-Trap.” Originally developed by UWM Associate Professor of Chemistry Jorg Woehl, E-Trap is a tool that allows researchers to corral tiny particles like viruses and DNA molecules so they can be studied under a microscope. The device involves a microscope slide that has been treated with a thin, metal coating, but at the center is a small, circular space that’s left untreated. When a particle floats into the circle, the device applies voltage to the coated portions, creating a kind of “force field” to hold the particle in the circular viewing area. Francis and Woehl met last spring through the class. Francis was particularly excited to work on E-Trap; he’d used similar tools as an undergraduate research assistant in the mechanical engineering lab at UWM.

And because scientists are increasingly interested in studying particles on a smaller scale, he’s optimistic about the potential for such technologies. “These devices help you manipulate and see things at a micro-level, and possibly nanolevel,” he says. The technology is patented through the UWM Research Foundation. Francis, a two-time marathon runner, wanted to help move E-Trap on to the next phase of development. So he asked Woehl if he could enter E-Trap in the SSC, and Woehl gave his blessing. Through the SSC, he’s had the opportunity to meet established entrepreneurs and has received help in identifying potential customers for E-Trap. He has worked with a student team from a multidisciplinary course known as “Product Realization,” which developed a fixture to hold the E-Trap under a microscope. The goal is to allow researchers to “plug-in and go.” Francis says the SSC process has helped him think like an entrepreneur, a skill that can enhance what students are already learning in college. “Startup projects keep you thinking, keep you active and motivated,” Francis says. “I think it’s great for students to stay motivated with something that they really like to do.”

The experience has also taught him to look at the possibility of failed attempts with more tolerance. “You hear this a lot about startup businesses: not all ideas succeed, so the more businesses you try to start, the more likely you are to have one prevail.”

**Update:** Francis has incorporated his company, which is now called Isopoint Technologies. He recently took first place in the New Ventures Business Plan Competition, sponsored by the Lubar School of Business and La Macchia Enterprises, winning $7,500. He is exploring a link with the Medical College of Wisconsin and is concentrating on customer discovery.
LEVEL Camera Products
Kyle Ilenda: senior, mechanical engineering
Spencer Johnson

Growing up in Superior, Wis., Kyle Ilenda and Spencer Johnson bonded over free-style skiing. But when the two friends started videotaping their ski moves, they discovered a shared passion for video production. As their video skills grew in high school, they developed a do-it-yourself approach to making camera equipment to get the best footage. In fact, the pair already runs a video production-service business. This ultimately led to their winning Student Startup Challenge (SSC) idea, LEVEL Camera Products. “We’ve been making devices to use with our cameras ever since we got into video production,” says Ilenda, now a mechanical engineering student at UWM. “We were running to the hardware store at every free opportunity, always tinkering in the basement or garage.” They realized that other videographers might want similar accessories to get certain shots, but might prefer to skip the do-it-yourself-MacGyver approach.

“With LEVEL, you’re buying those parts and pieces that give you the freedom to create and tailor devices,” Ilenda says. “It’s an alternative to purchasing multiple separate components, which can add up very quickly.”

The LEVEL kit includes seven pieces that allow users to make one of three different accessories, while minimizing the amount of additional equipment they need to carry: a camera slider that creates smooth linear motion, a shoulder rig to stabilize handheld footage, and a tabletop dolly that allows users to create linear motion shots with a flat surface like a table. Johnson explains. He and Ilenda are experimenting to determine the best ways to manufacture their prototype components, using machining and manufacturing equipment available at UWM and at Iron Range Engineering, a program at Minnesota State University-Mankato. Ilenda has found many other resources at UWM, essentially applying his own research project to at least two courses.

The prototypes were honed in the “Product Realization” course, where he and a team of other students taking the class, improved the function of the pieces. Ilenda created a business plan for LEVEL in “Commercialization and Innovation,” a course taught by the president of the UWM Research Foundation, Brian Thompson. Meanwhile, a student team in an entrepreneurship class at the Lubar School of Business is currently conducting surveys to help Ilenda and Johnson understand the market for their product. A UWM fiber arts student has also worked with the pair to design a carrying case for the LEVEL components. Ilenda says the SSC process has also taught him a thing or two about generating ideas. He now carries a sketch book with him at all times, and makes an effort to jot down ideas as soon as they come to him—in the middle of a lecture, say, or while walking to class.

There was a time, he says, when he wasn’t sure if mechanical engineering was the right degree for him. “The thought of working in a corporate job didn’t excite me,” he says. “But once I joined this [entrepreneurial] ecosystem, that’s when I realized – this is exactly what I wanted.” The friends hope that LEVEL makes it to market, and that they have the opportunity to build off its success. Says Ilenda: “We hope to continue doing both of the things we love doing. Product development and coming up with different ways to hold and move a camera.”

Update: The team tied for third place in the New Ventures Business Plan Competition, sponsored by the Lubar School of Business and La Macchia Enterprises, winning $2,000.
Mesmer
Andrew McConville: alumnus, design and visual communication/computer science
William Barlas: senior, engineering
Kyle Forsberg: senior, global studies
Maximilian Felgenhauer: senior, computer science

While he was a student at UWM, Andrew McConville wished there was an easier way to set up his classes. He and his faculty advisor relied on a paper checklist to ensure that he was on track to graduate. “My advisor and I would write on it and photocopy it, and the checklist was really torn up after the first year or two,” McConville remembers.

As a sophomore, he created a Word document with boxes and arrows to plot out his courses semester by semester, but this method wasn’t flexible. As for the university’s online course catalog and PAWS system, McConville describes them as “clunky.” His senior year, McConville took a graphic design class where he was asked to design a solution to a real-world problem, and he knew exactly what to tackle. “I wanted to take the existing university systems and integrate them into a modern, intuitive, visual, interactive experience,” he says. As he began to mock up designs, other students in the class took an interest. “I realized that this could be something.” He named his software “Mesmer,” after an 18th century German physician known for mysterious cures. That same semester he took a computer science class in which he began coding Mesmer for his final project.

A demo version of Mesmer includes an orange bar at the top that shows a student’s progress toward graduation. It lists the classes a student has taken, groups them by semester, and includes the grades and credits earned. “When you want to add a class, you literally just drag it into the semester that you want to take it,” McConville explains. “Lots of computer programs are kind of ugly. I wanted to make a beautiful interface so people want to use it.” Winning the Student Startup Challenge (SSC) gives McConville access to the business expertise of students in the Lubar School of Business, who are helping him develop a business plan. Partnering with UWM also provides an opportunity to learn how university databases work, and test his product.

After displaying Mesmer at the annual Design Entrepreneurship Showcase for Peck School of the Arts students, he met Michael Hostad, director of Web and Mobile Strategy at UWM’s Mobile Innovation Lab (also known as the “App Brewery”). Since May McConville has been working at the Brewery full time, he met Forsberg who was interning at Startup Milwaukee. Forsberg brought on Barlas and Felgenhauer to work on the “back end.” The team is preparing to run a summer pilot test of Mesmer at UWM. If all goes well, they hope to try a full implementation at UWM in the fall. They are making sure the software is “backwards compatible” with the enterprise systems, like Oracle, that most universities use to operate their registrations. Meanwhile, McConville recognizes the unique resources he has been able to tap into at UWM in his quest to start a company, including the App Brewery, where he now helps new teams who have won the SSC. “College students who don’t really have a lot of money can get a whole design team for free, which is super awesome,” he says.

Update: The team has named the company MajorWeb and are working to incorporate it as an LLC. They also tied for third place in the New Ventures Business Plan Competition, sponsored by the Lubrar School of Business and La Macchia Enterprises, winning $2,000.