



Telerehabilitation Web-Based Portal for Community-Based Rehabilitation

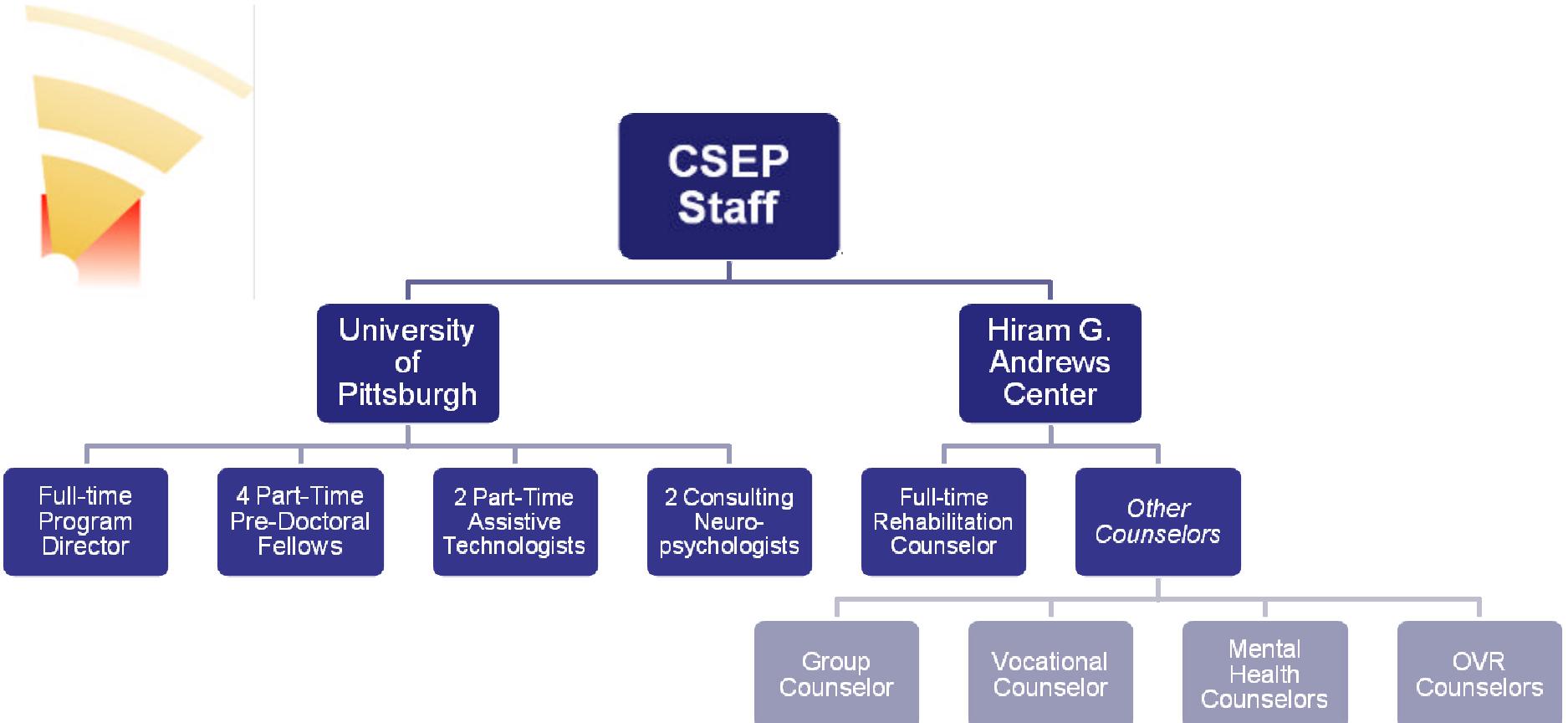
Jamie Schutte, MS



Introduction

- **Telerehabilitation (TR):** The application of telecommunication technology for supporting rehabilitation services
 - Emerging field, rapidly growing
 - Advances of Internet technologies and availability of broadband connections have expanded TR applications that were previously too complicated/expensive to deliver
- Nature of the rehabilitation services determines the necessary telecommunication technology and informatics infrastructures
- The University of Pittsburgh's Department of Rehabilitation Science and Technology (RST) conducts clinical, academic, and research activities in its Johnstown, PA location at Hiram G. Andrews Center (HGAC)





- Coordinating and organizing across employers and geographical locations makes communication a daunting task



Clinical Objective

- To develop a web-based Portal that would support a variety of clinical activities in order to increase efficiency and improve clinical practices
 - Method of gathering and updating participants' information and progress
 - Planning and updating the group schedule
 - Organizing Learning Technologies Program (LTP)
 - Documenting intake/referral screening information
 - Storing program evaluation/research data
 - Improving methods of staff communication
- Ideally, Portal could be modified to fit the needs of other community-based rehabilitation programs





Methods

- PITT model of Information Management Infrastructure was developed at the University of Pittsburgh's Rehabilitation Engineering and Research Center on Telerehabilitation (RERC-TR)
- Infrastructure was developed through a design process that focused on accessibility, openness, extensibility, cost-effectiveness, and security





Results - Security

- Encompassing all aspects of the PITT model is the security of the infrastructure
- Portal has been built to comply with common security policies
 - Encryption of data
 - Requiring access information
 - Limiting access to rightful persons





Results - Portal

- Homepage
- Calendar
- Tasks
- Sessions and Activities
- Learning Technologies Program (LTP)
- Participant Information
- Team Discussion
- Referral Screening/Intake Interview
- Program Evaluation/Research Data
- Resources





View All Site Content

Tools

- CSEP (Tier I) Calendar
- LTP Calendar
- Tier II and Tier III Calendar
- Tasks

Documents

- Sessions and Activities
- Learning Technologies Program (LTP)
- Tier I - Summer 2009
- Tier II
- Tier III
- Referral Screening/Intake Interview
- Resources
- Program Evaluation/Research Data
- In-Service Training

Discussions

- CSEP-Summer 2009
- LTP Notes



Announcements

Take Pictures for Banquet

5/1/2009 8:30 AM

by Gales, Sara Kathleen

Please take pictures of sessions, as appropriate, so that we get a good variety of pictures for the banquet slide show.

SIMS

2/7/2009 2:19 PM

by Schutte, Jamie L

Primary clinicians: remember to discuss SIMS progress with participants

 Add new announcement

Shared Documents

Type Name

Modified By

Links

URL

[Hiram G. Andrews Center homepage](#)[University of Pittsburgh homepage](#)[CSEP Gmail](#) Add new link

RSS Viewer

Rehabilitation Counseling Bulletin current issue

[Predicting Employment Outcomes of Consumers of State-Operated Community Rehabilitation Centers](#)

CSEP (Tier I) Calendar

2009		
Jan	Feb	Mar
Apr	May	Jun
Jul	Aug	Sep
Oct	Nov	Dec

Today is
Wednesday, June 03, 2009

[View All Site Content](#)

Tools

- [CSEP \(Tier I\) Calendar](#)
- [LTP Calendar](#)
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- [Tasks](#)

Documents

- [Sessions and Activities](#)
- [Learning Technologies Program \(LTP\)](#)
- [Tier I - Summer 2009](#)
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- [Tier III](#)
- [Referral Screening/Intake Interview](#)
- [Resources](#)
- [Program Evaluation/Research Data](#)

		June, 2009							
		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
31	1	2	3	4	5	6			
		Tryout: Natasha (Med. Office)	Tryout: Natasha (Med. Office)	Voc Project 1 DUE	Jamie/Jeanine	CSEP Employee of Week			
		Sara/Jamie	Sara/Maren	Maren/Jeanine					
		CSEP PAYCHECKS							
		▼ 9 more items	▼ 7 more items	▼ 7 more items	▼ 7 more items	▼ 6 more items			
7	8	9	10	11	12	13			
		Sara/Jamie	Sara/Maren	Maren/Jeanine	Jamie/Jeanine	CSEP Employee of Week			
		CSEP PAYCHECKS							
		8:00 AM Atty Gen (See Description)	8:00 AM Daily Planning Meeting						
		▼ 5 more items	▼ 6 more items	▼ 6 more items	▼ 6 more items	▼ 2 more items			
14	15	16	17	18	19	20			
		Sara/Jamie	Sara/Maren	Maren/Jeanine	Jamie/Jeanine	CSEP Employee of Week			
		CSEP PAYCHECKS							
		8:00 AM Daily Planning Meeting	8:00 AM Daily Planning Meeting	8:00 AM Daily Planning Meeting	8:00 AM Daily Planning Meeting	8:00 AM Daily Planning Meeting			
		▼ 7 more items	▼ 6 more items	▼ 6 more items	▼ 6 more items	▼ 2 more items			

Done



Internet

100%



CSEP (Tier I) Calenda...

homepage.JPG - Paint

4:17 PM

View All Site Content		7 AM										
Tools												
<ul style="list-style-type: none">▪ CSEP (Tier I) Calendar▪ LTP Calendar▪ Tier II and Tier III Calendar▪ Tasks		8	8:00 AM Daily Planning Meeting	8:00 AM Daily Planning Meeting	8:00 AM Daily Planning Meeting	8:00 AM Daily Planning Meeting	8:00 AM Daily Planning Meeting	8:00 AM Daily Planning Meeting	8:30 AM Weekly Review			
Documents		9	8:30 AM Test - Brain/PAC	8:30 AM Intro to Memory	8:30 AM Anchoring	8:30 AM Memory and Study Skills			9:00 AM PAC Activity - Led by Melissa			
Documents		10	9:30 AM Review Test	9:30 AM Concentration	9:30 AM Social Memory: Names and Faces	9:30 AM Split Groups-Group 1: Discovery Wheel. Group 2- What is			10:00 AM Feedback Circle			
		11	10:00 AM Internet Safety	10:30 AM AT Group	10:30 AM Introduction Activity	10:30 AM I'm Going to a Picnic Activity			11:00 AM Double-Tenca			
		12 PM	NTSS Lab									
		1	1:00 PM Review Videotaped Sessions	1:00 PM Mike's Group	1:00 PM Visualization	1:00 PM Mike's Group						
		2	2:00 PM Independent Time	2:00 PM Independent Time	2:00 PM Independent Time	2:00 PM Independent Time/ Sims with Ed (See description)						
Discussions		3	3:00 PM Wrap-Up	3:00 PM Wrap-Up	3:00 PM Wrap-Up	3:00 PM Wrap-Up						
Pictures		4										
		5										
		6										



CSEP (Tier I) Calendar

June, 2009						
S	M	T	W	T	F	S
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	1	2	3	4

Today is
Wednesday, June 03, 2009

[View All Site Content](#)

Tools

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Documents

- [Sessions and Activities](#)
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- [Tier II](#)

Done

This List: CSEP (Tier I) Calenda



New Actions Settings

View: **Calendar**

[1 Day](#) [7 Week](#) [31 Month](#)

[Sara/Maren](#)

7 AM

[Tuesday, June 09, 2009](#)

8

[8:00 AM Daily Planning Meeting](#)

9

[8:30 AM Working and Procedural Memory](#)

10

[9:30 AM Intro to Hamburger Turning](#)

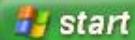
11

[10:30 AM AT Group](#)

12 PM

1

[1:00 PM Mike's Group](#)



CSEP (Tier I) Calenda...

calendar2.JPG - Paint

4:21 PM



Internet

100%

C CSEP (Tier I) Calendar - Cognitive Abilities & Social Interactions... - Windows Internet Explorer X

File Edit View Favorites Tools Help

Live Search

CSEP (Tier I) Calendar - Cognitive Abilities & Social Int... Page Tools

CSEP Portal

Home Site Actions

CSEP Portal > CSEP (Tier I) Calendar > Cognitive Abilities & Social Interactions > Edit Item

CSEP (Tier I) Calendar: Cognitive Abilities & Social Interactions

OK Cancel

Attach File | Edit Series | Delete Item | Spelling... * indicates a required field

Title *	Cognitive Abilities & Social Interactions		
Location			
Start Time *	5/28/2009	8 AM	30
End Time *	5/28/2009	9 AM	30
Description	<p>Participants will be provided with a chart, which identifies nine associated areas of cognitive skills, including memory, attention, organization, problem-solving, self-awareness, impulsivity, initiation, self-monitoring, and flexible thinking. These areas will be briefly described. Participants will then be asked to write ways in which strengths and weaknesses in</p>		
All Day Event	<input type="checkbox"/> Make this an all-day activity that doesn't start or end at a specific hour.		
Recurrence	Every 1 week(s) on: Monday, Tuesday, Wednesday, Thursday		
Workspace			
Attachments	Cognitive Abilities Affecting Social Interaction - DISCUSSION.doc <input type="checkbox"/> Delete Cognitive Abilities Affecting Social Interaction - WORKSHEET.doc <input type="checkbox"/> Delete		

Created at 5/22/2009 9:22 AM by Gales, Sara Kathleen
Last modified at 5/22/2009 10:50 AM by Schutte, Jamie L

OK Cancel

Done



CSEP (Tier I) Calenda...

calendar3.JPG - Paint

Program Manual (origi...



Internet

100% 4:25 PM



Descriptions, outlines, and handouts for group sessions and activities

New | Upload | Actions | Settings

View: **All Documents**

Type	Name	Modified	Modified By
Folder	1st Week - Introduction	4/24/2009 12:46 PM	Schutte, Jamie L
Folder	Attention	2/4/2009 11:35 AM	Schutte, Jamie L
Folder	Awareness	2/4/2009 11:36 AM	Schutte, Jamie L
Folder	Brain and Cognition	3/9/2009 8:34 AM	Schutte, Jamie L
Folder	Communication	2/4/2009 11:40 AM	Schutte, Jamie L
Folder	End of Term - Wrap-up	4/24/2009 12:47 PM	Schutte, Jamie L
Folder	Flexible Thinking	2/4/2009 11:37 AM	Schutte, Jamie L
Folder	Guest Speakers	2/4/2009 11:40 AM	Schutte, Jamie L
Folder	Initiation	2/4/2009 11:37 AM	Schutte, Jamie L
Folder	Memory	2/3/2009 1:46 PM	Schutte, Jamie L
Folder	Miscellaneous	2/4/2009 11:40 AM	Schutte, Jamie L
Folder	Organization	2/4/2009 11:37 AM	Schutte, Jamie L
Folder	Planning	2/4/2009 11:37 AM	Schutte, Jamie L
Folder	Problem Solving	2/4/2009 11:37 AM	Schutte, Jamie L
Folder	Salary Plan	2/10/2009 8:12 AM	Vigilante, Maren A
Folder	Self-Advocacy	2/4/2009 11:39 AM	Schutte, Jamie L
File	Self-Advocacy	2/6/2009 1:22 PM	Schutte, Jamie L

In-Service Training - Windows Internet Explorer

http://www.csep.pitt.edu/InService%20Training/Forms/AllItems.aspx

File Edit View Favorites Tools Help

In-Service Training

CSEP Portal

Welcome Schutte, Jamie L | My Site | My Links |

This List: In-Service Training

CSEP Portal

Home

In-Service Training

Collection of presentations for in-service trainings

New | Upload | Actions | Settings |  View: **All Slides**

Thumbnail	Name	Presentation	Description	Modified By	Modified	Checked Out To
	ASD Information			Schutte, Jamie L	5/4/2009 9:34 AM	
	Communication and Our Changing Population			Gales, Sara Kathleen	5/2/2009 3:36 PM	
	CSEP Information			Schutte, Jamie L	4/24/2009 12:14 PM	
	MH Information			Schutte, Jamie L	4/24/2009 12:17 PM	
	Spina Bifida Information			Schutte, Jamie L	4/24/2009 12:23 PM	
	TBI Information			Schutte, Jamie L	4/24/2009 12:25 PM	

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Discussions

start In-Service Training - ... sessions and activitie... 100% 4:28 PM



Discussion

- Application
 - Introduced February 2009
 - Implemented summer term (May) 2009
- Given experiences and feedback thus far, the authors anticipate it will provide functional benefits, including improved communication and increased efficiency, compared to the old system of paper records and a written curriculum
- Creation of a customized, user-friendly Portal has the potential to improve standard operating procedures in a variety of different community-based clinical settings





Acknowledgements

- University of Pittsburgh
 - Department of Rehabilitation Science and Technology
 - Michael Mccue, PhD
 - Michael Pramuka, PhD
 - Department of Health Information Management
 - Bambang Parmanto, PhD
 - Andi Saptono, MS
- Development of this system was funded by the **National Institute on Disability and Rehabilitation Research (NIDRR)** grant #H133E040012; an outcome of **Rehabilitation Engineering Research Center (RERC) on Telerehabilitation**
- This system was created in collaboration with **Hiram G. Andrews Center**, state-operated vocational rehabilitation facility, located in Johnstown, PA





Selected References

- Parmanto, B., Saptono, A., Sugiantara, W., Brienza, D., & Nnaji, B. (2006, June). *Information Technology Infrastructure for Supporting Telerehabilitation*. Poster session presented at the RESNA Conference, Atlanta, GA.
- Russell, T. G. (2007). Physical rehabilitation using telemedicine. *Journal of Telemedicine and Telecare*, 13 (5), 217-220.

